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H R L

THE  
WESTINGHOUSE AUTOMATIC BRAKE  
CATALOGUE  
1894.

The Hopkins Library  
presented to the  
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THIRD EDITION.

THE  
Westinghouse Air Brake Company,  
PITTSBURGH, PA., U. S. A.

---

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PITTSBURGH, PA.  
June, 1894.



*H. 3575.*

## PREFACE.

THIS Catalogue is mainly a combination of previous publications issued by this Company, revised and arranged in suitable form to enable the ordering of complete sets of Air Brake and Compressed Air Train Signaling Apparatus and detail repair parts therefor.

Some of the devices illustrated in our 1890 catalogue having been supplanted by more improved apparatus, are consequently omitted from this publication. The apparatus illustrated is, therefore, of our latest and most improved type.

The prices for complete sets of apparatus are given on pages 75 to 78 inclusive, together with the conditions under which the same are sold.

Other publications will be supplied upon application, that will specifically refer to the construction and proper operation and maintenance of our systems of Brake and Train Signaling apparatus.

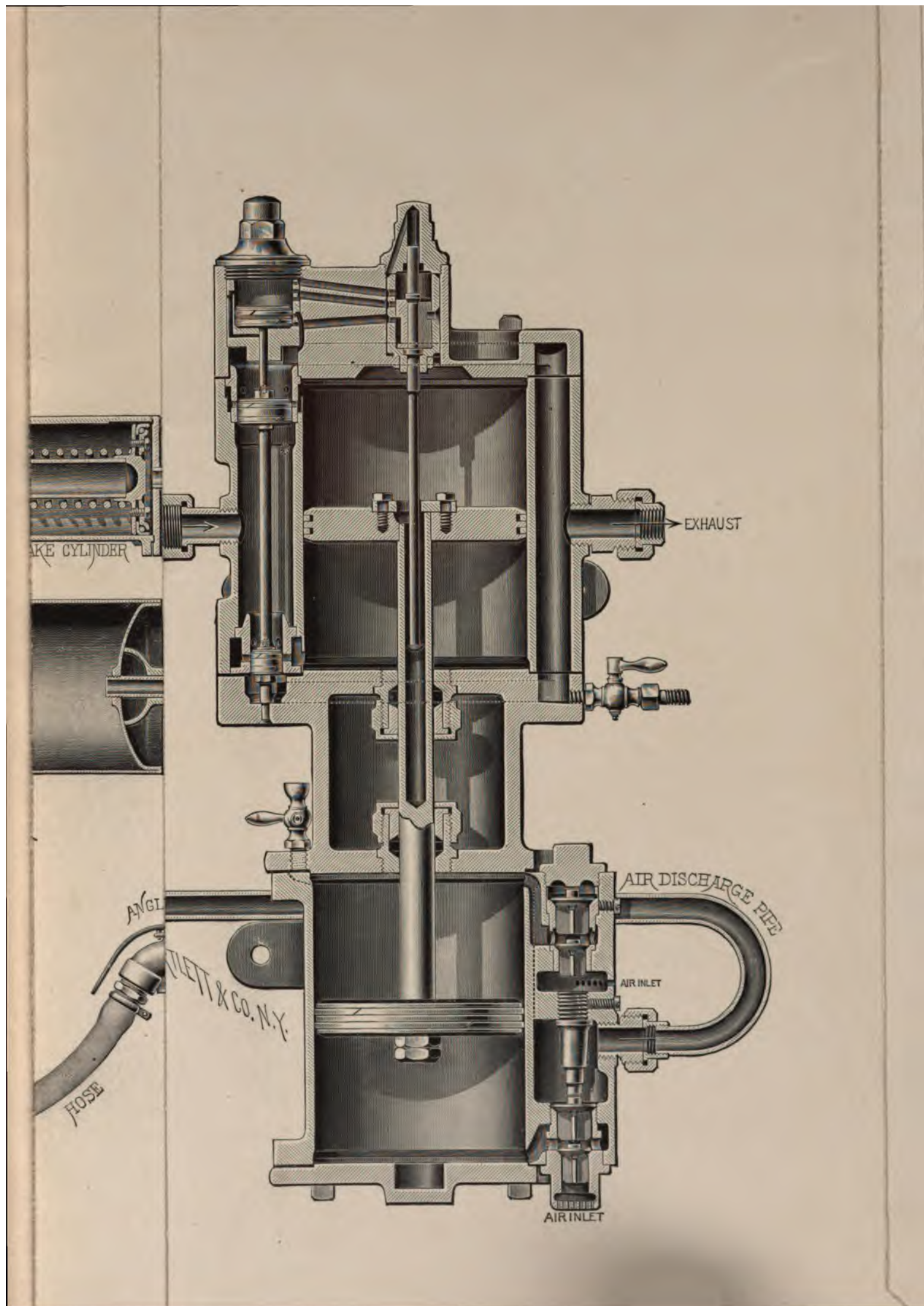
THE WESTINGHOUSE AIR BRAKE COMPANY.



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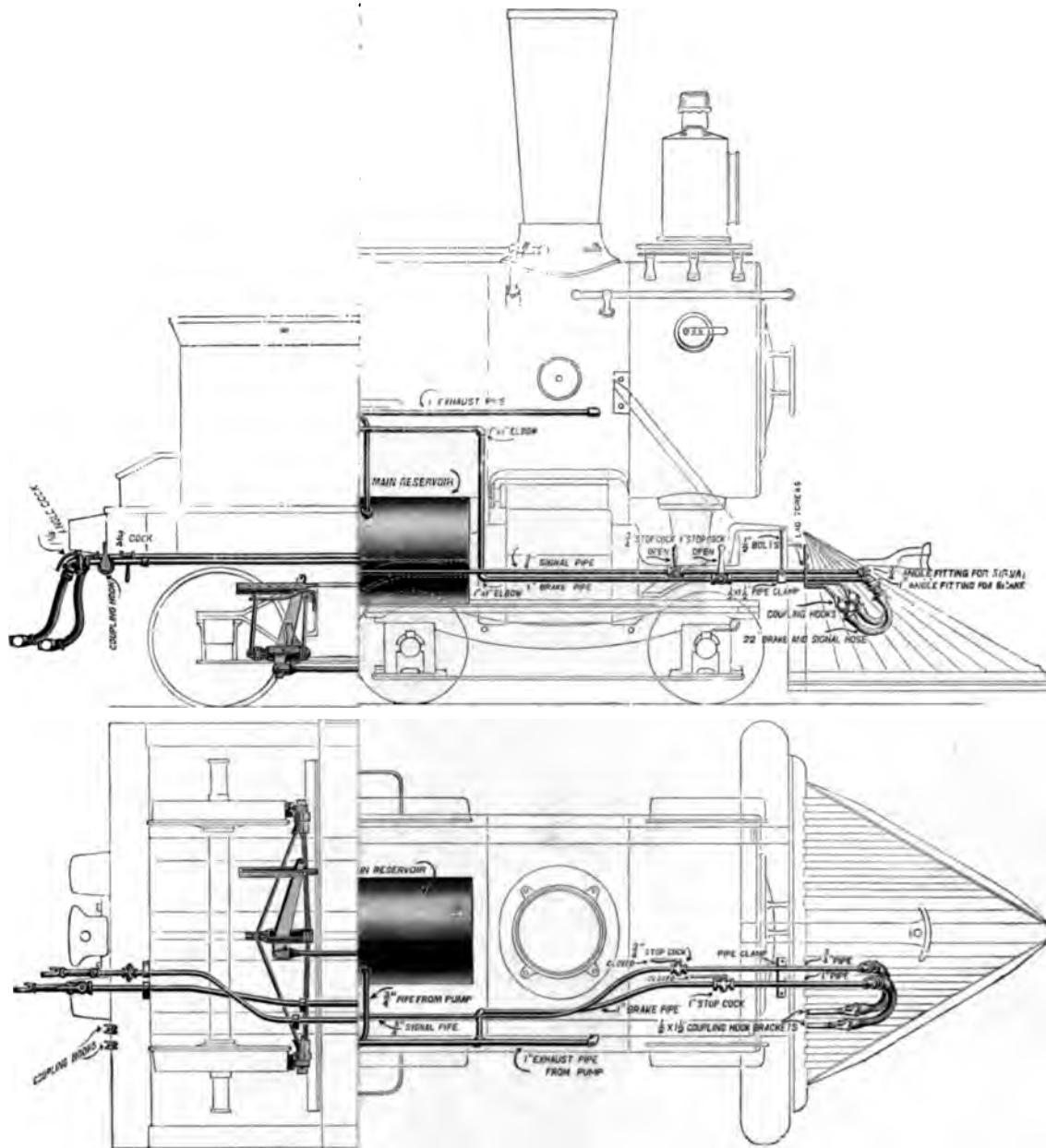
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WATER PUMP  
 AIR VALVE & WHISTLE  
 DRIVER BRAKE  
 RESERVOIR  
 DRIVER BRAKE TANK

1. The first part of the document is a list of names and addresses of the members of the committee.

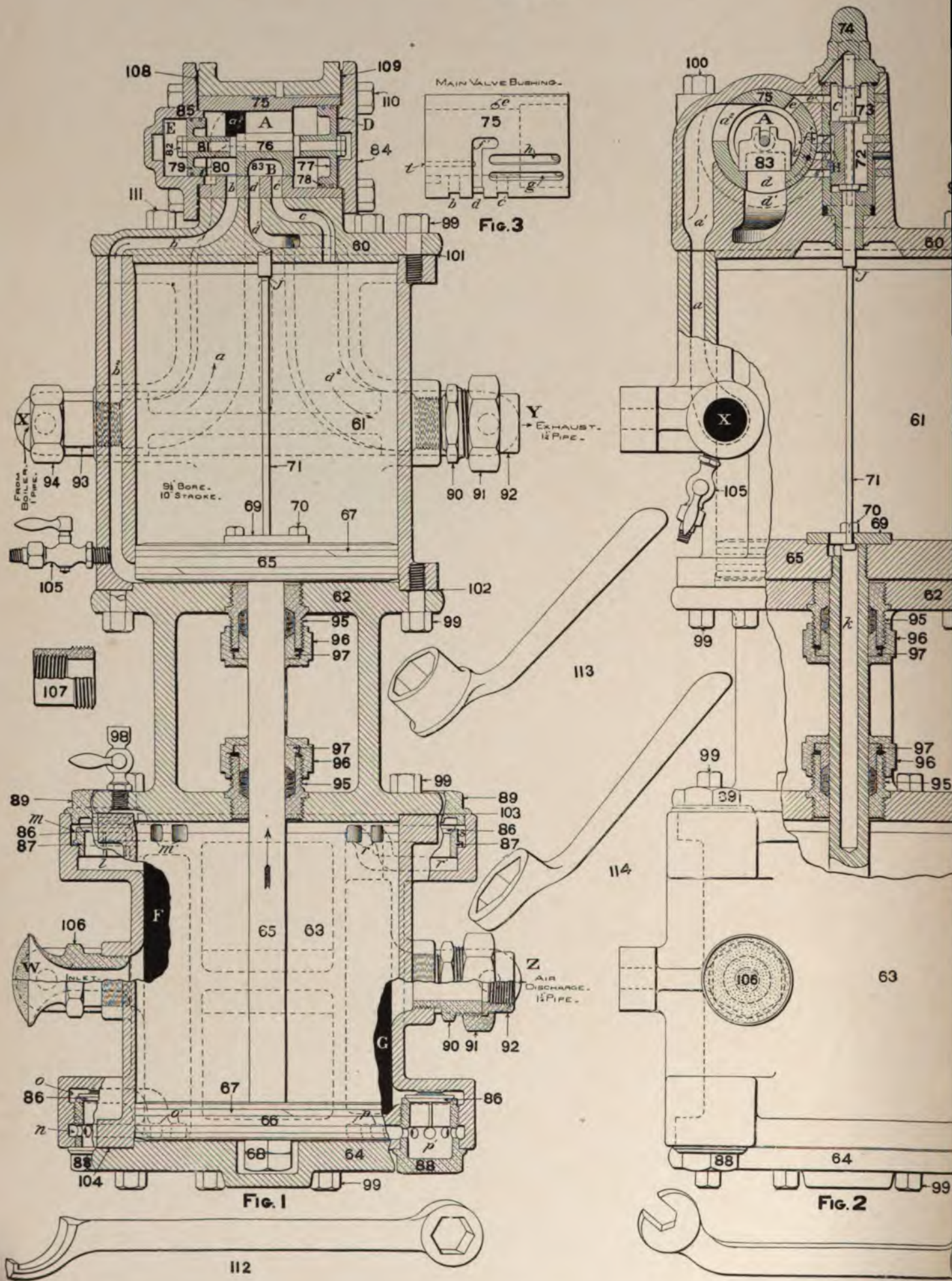








PLATE E4.





## The Westinghouse Automatic Brake.

### THE NINE AND ONE-HALF INCH IMPROVED AIR PUMP.

#### PLATE E4.

No. 1. Nine and one-half inch Improved Air Pump, complete.

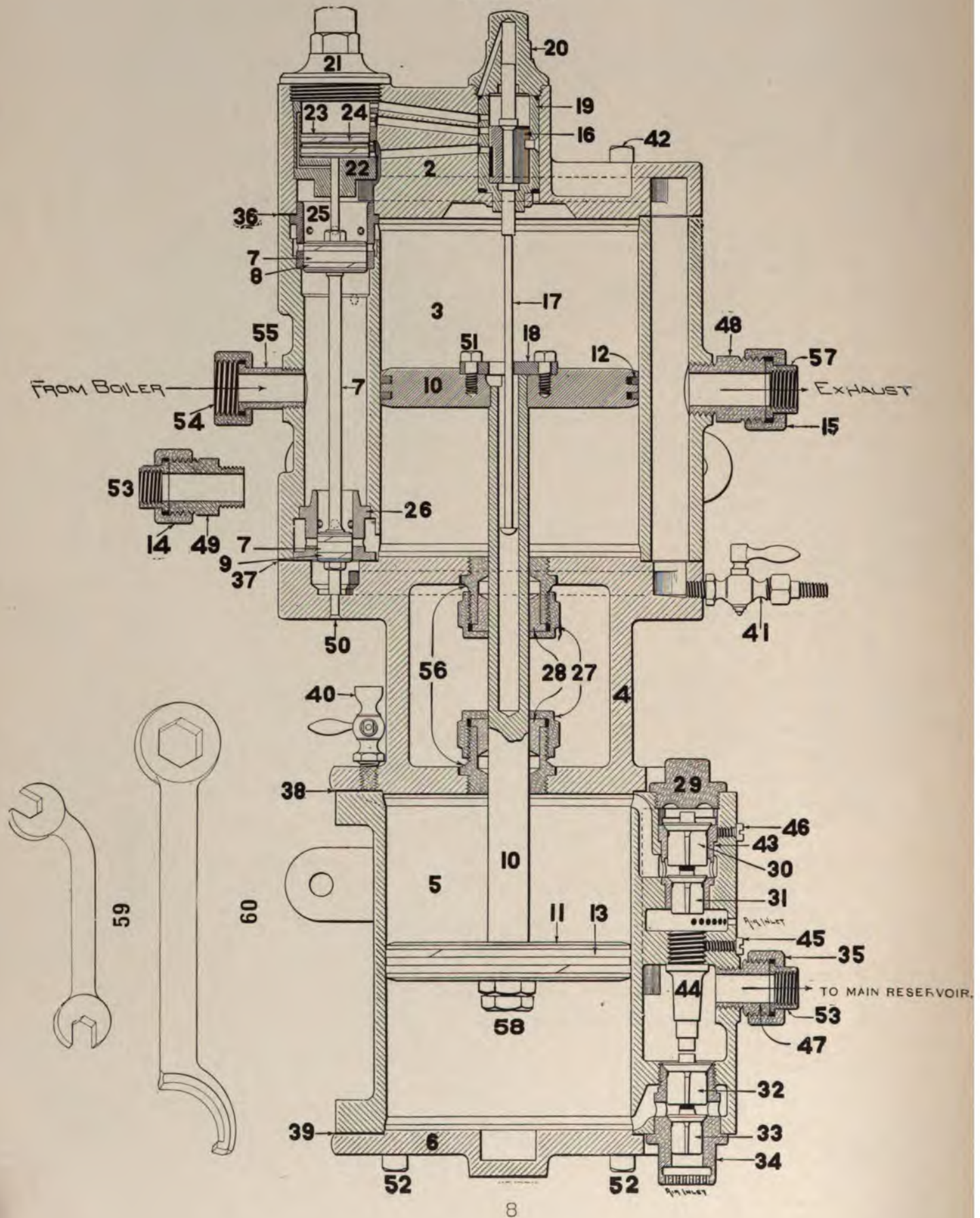
#### DETAILS.

No.		No.	
60.	Top Head, complete, (Includes parts Nos. 72, 73, 74, 75, 76, 83, 84, 85, 108, 109 and 8 of 110).	83.	Main Slide Valve.
61.	Steam Cylinder, complete, (Includes parts Nos. 90, 91, 92, 93, 94, and 2 of 105).	84.	Right Main Valve Cylinder Head.
62.	Center-piece, complete, (Includes parts Nos. 2 each of 95, 96 and 97, 98).	85.	Left Main Valve Cylinder Head.
63.	Air Cylinder, complete, (Includes parts Nos. 4 of 86, 2 each of 87, 88 and 89, 90, 91, 92 and 106).	86.	Air Valve.
64.	Lower Head.	87.	Air Valve Seat.
65.	Steam Piston and Rod, (Includes 2 each of 67 and 68, 69 and 2 of 70).	88.	Air Valve Cage.
66.	Air Piston, complete, (Includes 2 of 67).	89.	Valve Chamber Cap.
67.	Piston Packing Ring.	90.	One and One-fourth Inch Union Stud.
68.	Piston Rod Nut.	91.	One and One-fourth Inch Union Nut.
69.	Reversing Valve Plate.	92.	One and One-fourth Inch Union Swivel.
70.	Reversing Valve Plate Bolt.	93.	One Inch Steam Pipe Stud.
71.	Reversing Valve Rod.	94.	Governor Union Nut.
72.	Reversing Valve.	95.	Stuffing Box.
73.	Reversing Valve Chamber Bush.	96.	Stuffing Box Nut.
74.	Reversing Valve Chamber Cap.	97.	Stuffing Box Gland.
75.	Main Valve Bush.	98.	Air Cylinder Oil Cup.
76.	Main Piston Valve, complete, (Includes No. 77, 2 of 78, 79, 2 of 80, 81 and 2 of 82).	99.	Short Cap Screw ( $\frac{1}{2}$ x1 $\frac{1}{2}$ ).
77.	Large Main Valve Piston Head, (Includes 2 of No. 78).	100.	Long Cap Screw ( $\frac{1}{2}$ x6 $\frac{1}{4}$ ).
78.	Large Main Valve Piston Packing Ring.	101.	Upper Steam Cylinder Gasket.
79.	Small Main Valve Piston Head, (Includes 2 of No. 80).	102.	Lower Steam Cylinder Gasket.
80.	Small Main Valve Piston Packing Ring.	103.	Upper Air Cylinder Gasket.
81.	Main Valve Stem.	104.	Lower Air Cylinder Gasket.
82.	Main Valve Stem Nut.	105.	Drain Cock.
		106.	Air Strainer.
		107.	One-inch Steam Pipe Sleeve.
		108.	Left Main Valve Head Gasket.
		109.	Right Main Valve Head Gasket.
		110.	Main Valve Head Bolt, ( $\frac{1}{2}$ x1 $\frac{1}{4}$ ).
		111.	Cap Screw, ( $\frac{1}{2}$ x2).
		112.	Combined Packing and Cap Nut Wrench.
		113.	Air Valve Seat Wrench.
		114.	Air Valve Cage Wrench.
		115.	Cap Screw Wrench.

Orders must give number of Plate and of piece wanted.

# EIGHT-INCH AIR PUMP.

PLATE E5.



## The Westinghouse Automatic Brake.

### THE EIGHT INCH AIR PUMP.

#### PLATE E5.

No. 1. Eight Inch Air Pump, complete.

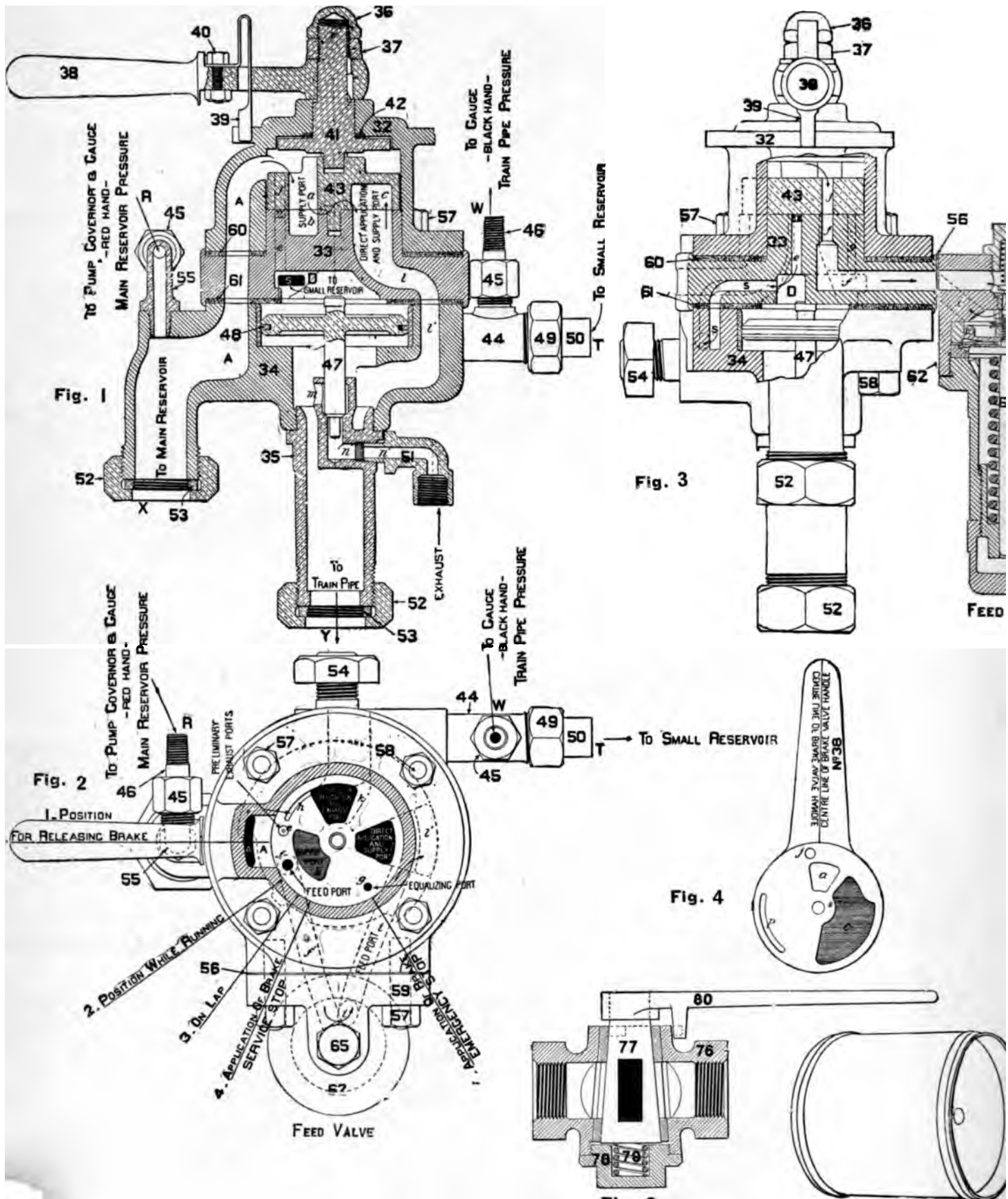
#### DETAILS.

No.		No.	
2.	Top Head, complete, (Includes parts Nos. 16, 19, 20, 21, 22, 23, and 2 of 24).	27.	Packing Nut.
3.	Steam Cylinder, complete, (Includes parts Nos. 7, 2 of 8 and 9, 15, 25, 26, 48, 54, 55 and 57).	28.	Packing Gland.
4.	Center-piece, complete, (Includes parts Nos. 2 of 27 and 28, 40, 41, 50, and 2 of 56).	29.	Upper Valve Chamber Cap.
5.	Air Cylinder, complete, (Includes parts Nos. 29, 30, 31, 32, 33, 34, 35, 43, 44, 45, 46, 47 and 53).	30.	Upper Discharge Valve.
6.	Air Cylinder Head.	31.	Upper Receiving Valve.
7.	Main Valve, complete, (Includes parts Nos. 2 of 8 and 9).	32.	Lower Discharge Valve.
8.	Upper Main Valve Packing Ring.	33.	Lower Receiving Valve.
9.	Lower Main Valve Packing Ring.	34.	Lower Valve Chamber Cap.
10.	Steam Piston and Rod, (Includes parts Nos. 2 of 12, 18, and 2 of 51 and 58).	35.	Three-fourths inch Reservoir Union Nut.
11.	Air Piston, complete, (Includes parts Nos. 2 of 13).	36.	Upper Steam Cylinder Gasket.
12.	Steam Piston Packing Ring.	37.	Lower Steam Cylinder Gasket.
13.	Air Piston Packing Ring.	38.	Upper Air Cylinder Gasket.
14.	Three-fourths inch Steam Pipe Union Nut.	39.	Lower Air Cylinder Gasket.
15.	One inch Exhaust Pipe Union Nut.	40.	Air Cylinder Oil Cup.
16.	Reversing Valve.	41.	Drain Cock.
17.	Reversing Valve Stem.	42.	Cylinder Head Bolt ( $\frac{1}{2}$ x2 $\frac{3}{4}$ ).
18.	Reversing Valve Plate.	43.	Valve Chamber Bush.
19.	Reversing Valve Bush.	44.	Discharge Valve Stop.
20.	Reversing Valve Chamber Cap.	45.	Valve Stop Set Screw.
21.	Reversing Cylinder Cap.	46.	Chamber Bush Set Screw.
22.	Reversing Cylinder.	47.	Three-fourths inch Reservoir Union Stud.
23.	Reversing Piston, complete, (Includes parts Nos. 2 of 24).	48.	One inch Exhaust Pipe Union Stud.
24.	Reversing Piston Packing Ring.	49.	Three-fourths inch Steam Pipe Union Stud.
25.	Upper Main Valve Bush.	50.	Main Valve Stop.
26.	Lower Main Valve Bush.	51.	Reversing Valve Plate Bolt.
		52.	Pump Head Bolt ( $\frac{1}{2}$ in. x 1 $\frac{1}{4}$ in.).
		53.	Three-fourths inch Union Swivel.
		54.	Governor Union Nut.
		55.	Governor Union Stud.
		56.	Piston Stuffing Box.
		57.	One inch Union Swivel.
		58.	Piston Rod Nut.
		59.	Cap Screw Wrench.
		60.	Combined Packing and Cap Nut Wrench.

Orders must give number of Plate and of piece wanted.



THE IMPROVED ENGINEER'S BRAKE AND EQUALIZING DISCHARGE VALVE  
WITH FEED VALVE ATTACHMENT. 1892 MODEL.  
PLATE E6.



## The Westinghouse Automatic Brake.

### THE IMPROVED ENGINEER'S BRAKE AND EQUALIZING DISCHARGE VALVE, WITH FEED VALVE ATTACHMENT.

(1892 Model.)

#### PLATE E6.

No. 1. Brake Valve with Cut-out Cock and Reservoir, complete.

#### DETAILS.

No.		No.	
32.	Valve Body.	55.	Gauge Pipe Fitting.
33.	Rotary Valve Seat.	56.	Feed Valve Case Gasket.
34.	Bottom Case.	57.	Half inch Nut.
35.	Bottom Cap.	58.	Half inch Bolt.
36.	Jam Nut.	59.	Feed Valve Stud.
37.	Top Nut.	60.	Upper Gasket.
38.	Handle.	61.	Lower Gasket.
39.	Handle Spring.	62.	Feed Valve Body.
40.	Handle Bolt and Nut.	63.	Supply Valve.
41.	Rotary Valve Key.	64.	Feed Valve Spring.
42.	Washer.	65.	Feed Valve Cap Nut.
43.	Rotary Valve.	66.	Feed Valve Piston Rod.
44.	Gauge Pipe Tee.	67.	Friction Ring.
45.	One-fourth inch Union Nut.	68.	Piston Spring.
46.	One-fourth inch Union Swivel.	69.	Spring Box.
47.	Piston Valve.	70.	Adjusting Nut.
48.	Piston Ring.	71.	Check Nut.
49.	Three-eighths inch Union Nut.	72.	Diaphragm (2 pieces).
50.	Three-eighths inch Union Swivel.	73.	Feed Valve Piston Nut.
51.	Exhaust Pipe Fitting.	74.	Feed Valve Piston Head (Includes No. 67).
52.	One inch Union Nut.	75.	Diaphragm Ring.
53.	One inch Union Swivel.		
54.	Holding Nut.		

FIG. 5.

Equalizing Reservoir, 10 in. by 12 in.

FIG. 6.

One inch Cut-out Cock, complete.

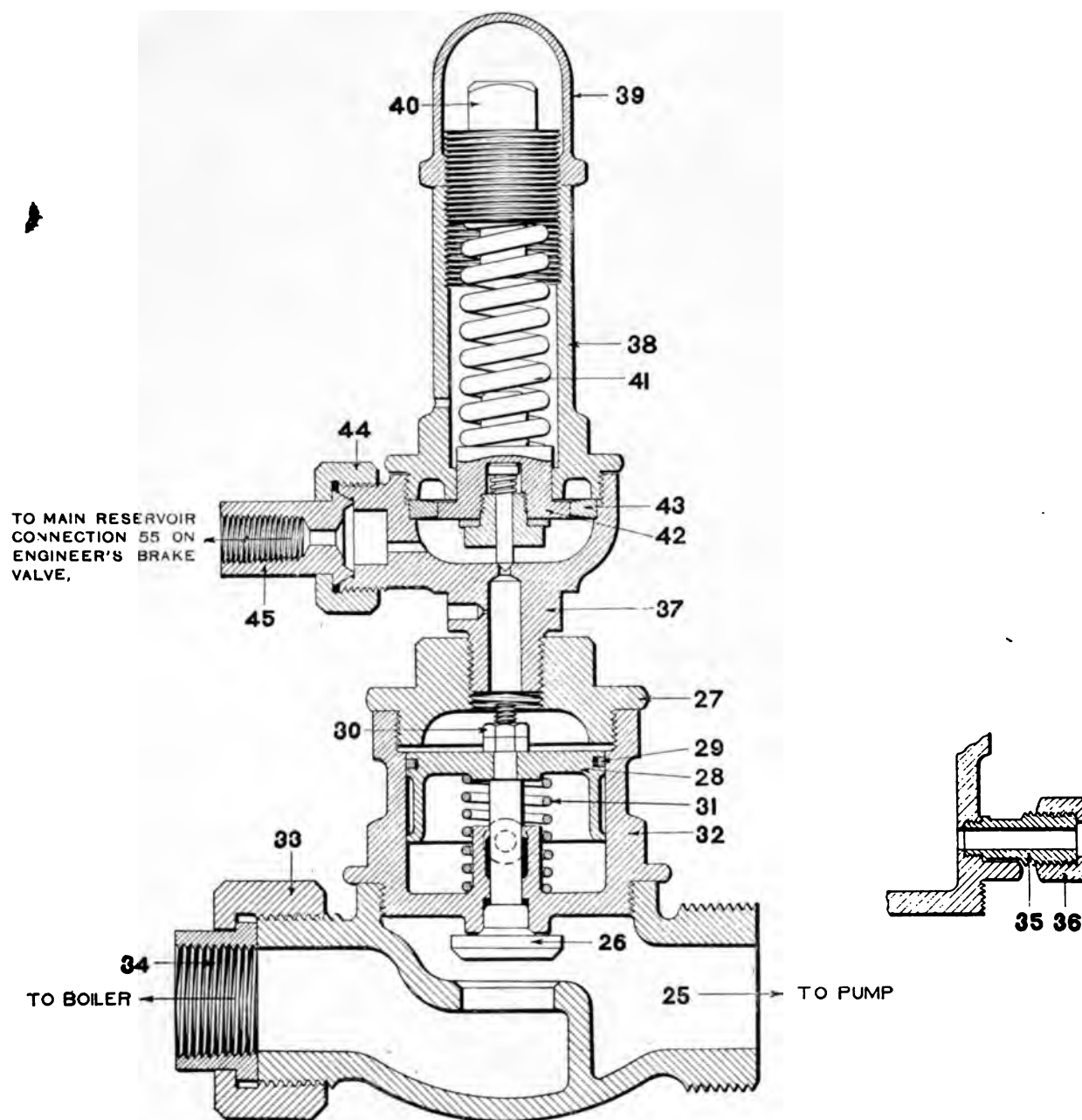
#### DETAILS.

No.		No.	
76.	Cock Body.	79.	Key Spring.
77.	Cock Key.	80.	Handle.
78.	Cap.		

Orders must give number of Plate and of piece wanted.

# ONE INCH PUMP GOVERNOR.

PLATE E7.



NOTE.—When the Pump Governor is used in connection with an Engineer's Brake Valve having an **EXCESS PRESSURE VALVE** in its construction, the diaphragm portion (Fitting 45) of the Governor, **MUST** be connected by suitable pipe **TO THE TRAIN PIPE**, and likewise **MUST** be connected to **THE MAIN RESERVOIR** when used in connection with an Engineer's Brake Valve fitted with a **FEED VALVE**.

In either case suitable attachments are provided for on the Brake Valve.

## The Westinghouse Automatic Brake.

### \*THE ONE INCH PUMP GOVERNOR.

#### PLATE E7.

No. 1. One Inch Pump Governor, complete.

#### DETAILS.

No.		No.	
25.	Steam Valve Body.	36.	Waste Pipe Union Nut.
26.	Steam Valve.	37.	Diaphragm Body.
27.	Cylinder Cap.	38.	Spring Box.
28.	Governor Piston, (Includes No. 29).	39.	Cap Nut.
29.	Piston Packing Ring.	40.	Regulating Nut.
30.	Governor Piston Nut.	41.	Regulating Spring.
31.	Governor Piston Spring.	42.	Diaphragm (complete).
32.	Steam Valve Cylinder.	43.	Diaphragm Ring.
33.	One inch Union Nut.	44.	Union Nut.
34.	One inch Union Swivel.	45.	Union Swivel.
35.	Waste Pipe Stud.		

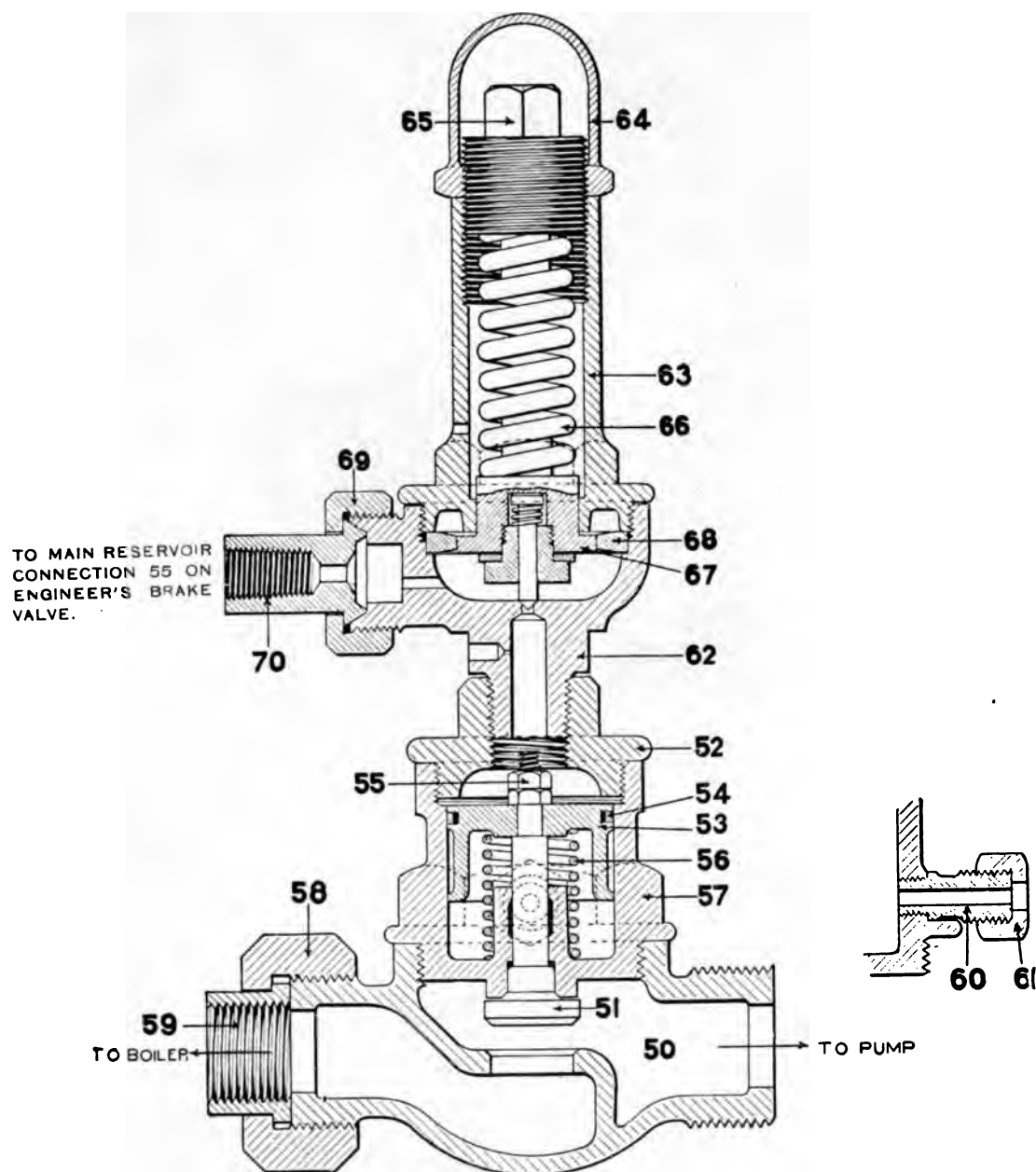
Orders must give number of Plate and of piece wanted.

\*NOTE.—This Governor is used only with the Nine and One-half inch Pump.  
Plate E4.



# THREE-FOURTHS INCH IMPROVED PUMP GOVERNOR.

PLATE E8.



NOTE.—When the Pump Governor is used in connection with an Engineer's Brake Valve having an **EXCESS PRESSURE VALVE** in its construction, the diaphragm portion (Fitting 70) of the Governor, **MUST** be connected by suitable pipe **TO THE TRAIN PIPE**, and likewise **MUST** be connected to **THE MAIN RESERVOIR** when used in connection with an Engineer's Brake Valve fitted with a **FEED VALVE**.

In either case suitable attachments are provided for on the Brake Valve.

## The Westinghouse Automatic Brake.

### THE THREE-FOURTHS INCH IMPROVED PUMP GOVERNOR.

PLATE E8.

No. 1. Three-fourths Inch Improved Pump Governor, complete.

#### DETAILS.

No.		No.	
50.	Steam Valve Body.	61.	Waste-pipe Union Nut.
51.	Steam Valve.	62.	Diaphragm Body.
52.	Cylinder Cap.	63.	Spring Box.
53.	Governor Piston, (Includes No. 54).	64.	Cap Nut.
54.	Piston Packing Ring.	65.	Regulating Nut.
55.	Governor Piston Nut.	66.	Regulating Spring.
56.	Governor Piston Spring.	67.	Diaphragm (complete).
57.	Steam Valve Cylinder.	68.	Diaphragm Ring.
58.	Three-fourths inch Union Nut.	69.	Union Nut.
59.	Three-fourths inch Union Swivel.	70.	Union Swivel.
60.	Waste-pipe Stud.		

Orders must give number of Plate and of piece wanted.

\*NOTE.—Used only with the Six and Eight Inch Standard Air Pumps.

# DETAILS OF BRAKE APPARATUS.

PLATE E9.

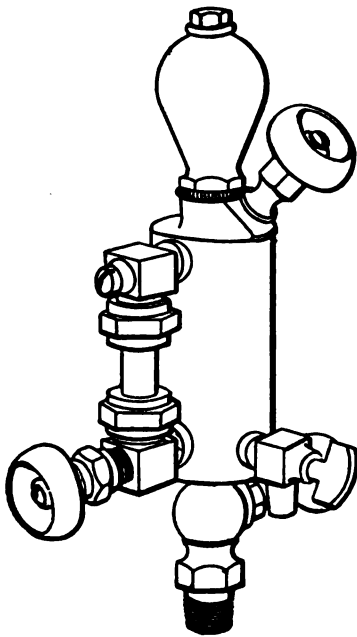


Fig. 1.

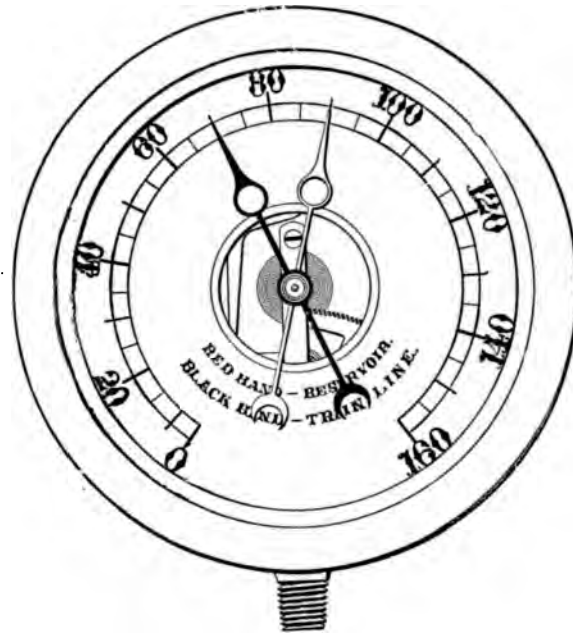


Fig. 2.

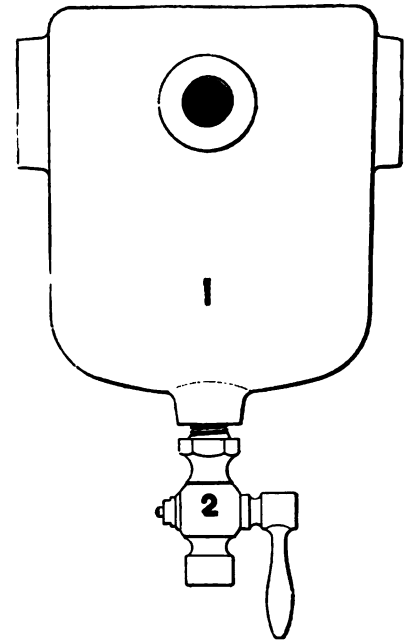


Fig. 3.

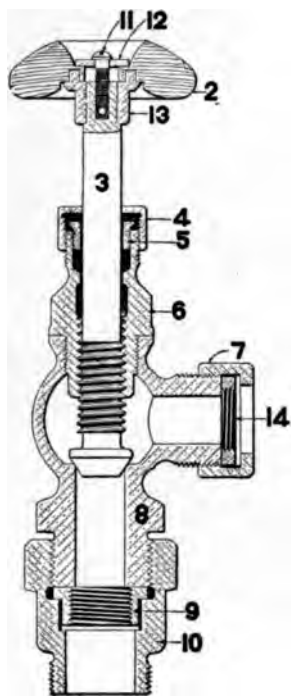


Fig. 4.

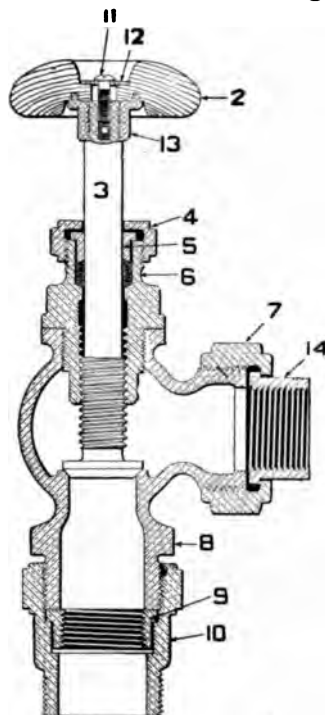


Fig. 5.

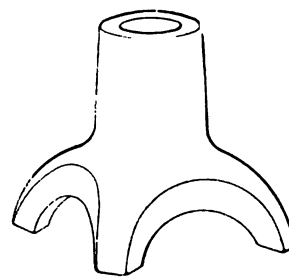


Fig. 6.



Fig. 7.

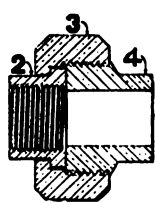


Fig. 8.

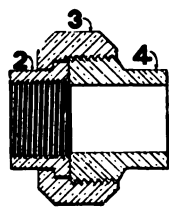


Fig. 9.

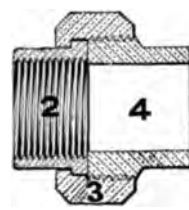


Fig. 10.

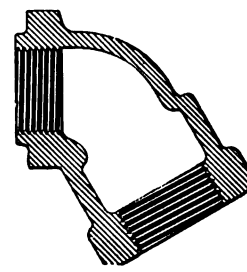


Fig. 11.

# The Westinghouse Automatic Brake.

## DETAILS OF BRAKE APPARATUS.

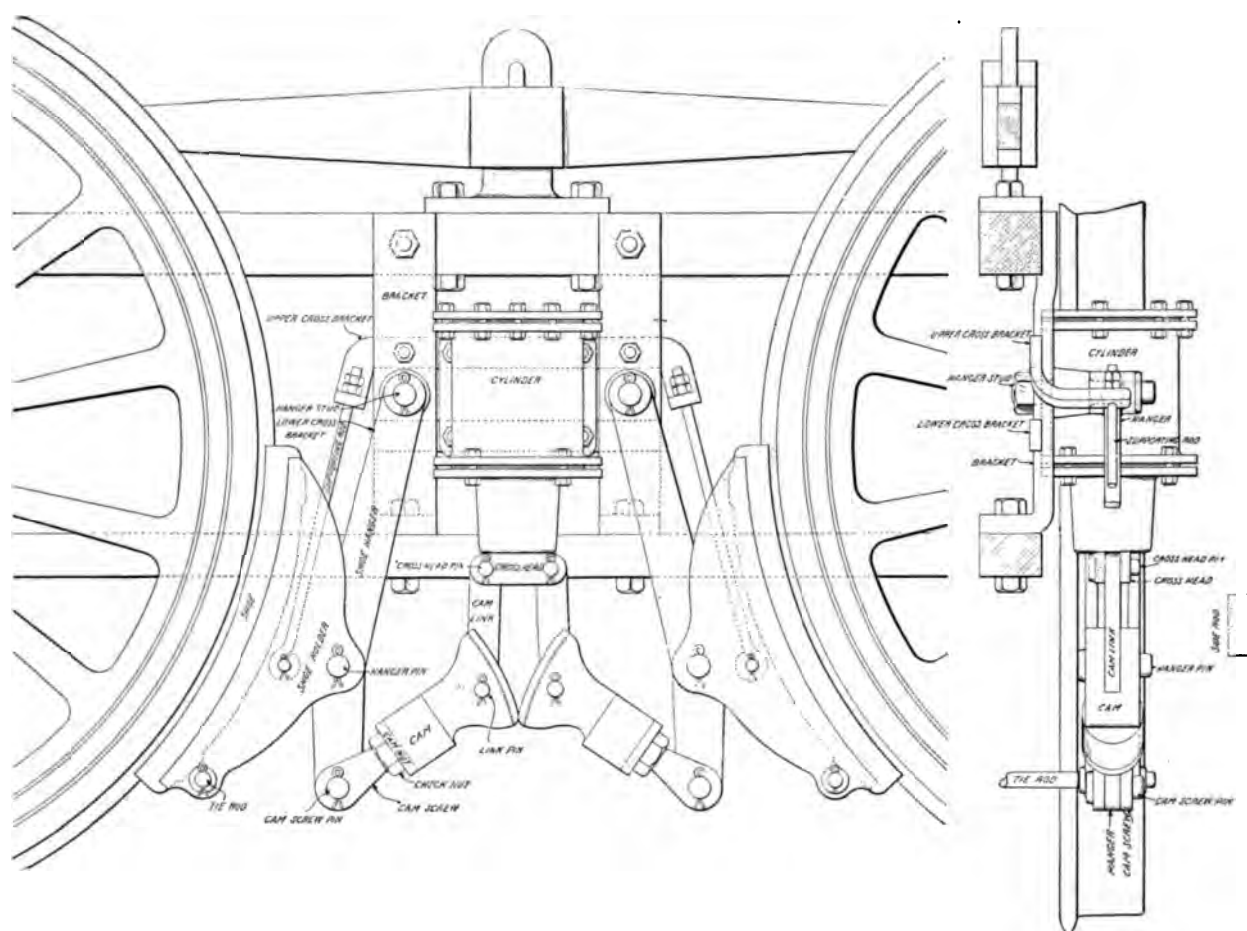
PLATE E9.

<p>FIG. 1. Air Pump Lubricator.</p>	<p>FIG. 5. Triple Valve Bracket.</p>
<p>FIG. 2. Duplex Air Gauge.</p>	<p>FIG. 6. Tender Drain Cup, complete.</p>
<p>FIG. 3. No. 1. Three-fourths inch Steam Valve, complete.</p>	<p>DETAILS. No. 1. Tender Drain Cup. 2. Tender Drain Cock.</p>
<p>DETAILS. 2. Hand Wheel. 3. Valve Stem. 4. Packing Nut. 5. Packing Gland. 6. Neck Piece. 7. Union Nut. 8. Valve Body. 9. Union Swivel. 10. Valve Stud. 11. Hand-wheel Screw. 12. Hand-wheel Washer. 13. Hand-wheel Socket. 14. Steam-pipe Swivel Ring.</p>	<p>FIG. 7. Triple Valve Nipple.</p>
<p>FIG. 4. 1. One inch Steam Valve, complete.</p>	<p>FIG. 8. One in. by one and one-fourth in. Angle Fitting.</p>
<p>DETAILS. 2. Hand Wheel. 3. Valve Stem. 4. Packing Nut. 5. Packing Gland. 6. Neck Piece. 7. Union Nut. 8. Valve Body. 9. Union Swivel. 10. Valve Stud. 11. Hand-wheel Screw. 12. Hand-wheel Washer. 13. Hand-wheel Socket. 14. Steam-pipe Swivel.</p>	<p>FIG. 9. Three-fourths inch Reservoir Union, complete.</p>
	<p>DETAILS. 2. Union Swivel. 3. Union Nut. 4. Union Stud.</p>
	<p>FIG. 10. One inch Reservoir Union, complete.</p>
	<p>DETAILS. 2. Union Swivel. 3. Union Nut. 4. Union Stud.</p>
	<p>FIG. 11. 1. One and one-fourth inch Reservoir Union, complete.</p>
	<p>DETAILS. 2. Union Swivel. 3. Union Nut. 4. Union Stud.</p>
	<p>FIG. 12. Cam Nut Wrench.</p>

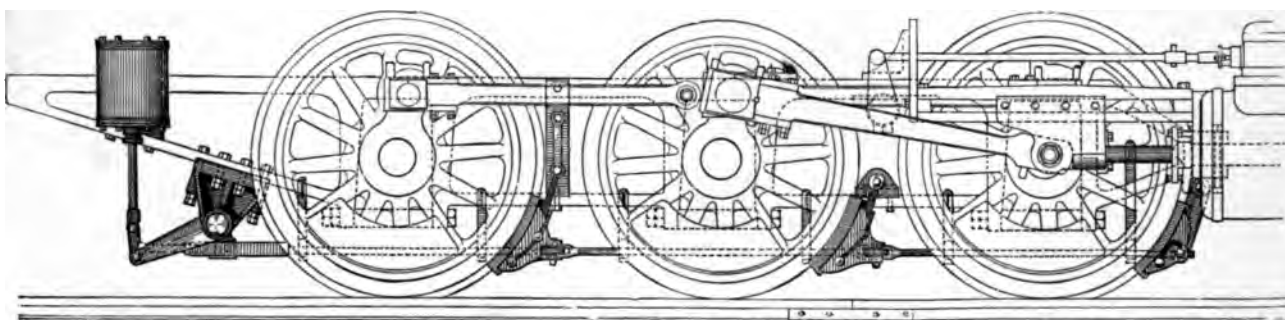
Orders must give number of Plate and of piece wanted.



DRIVING WHEEL BRAKE.  
PLATE E10.

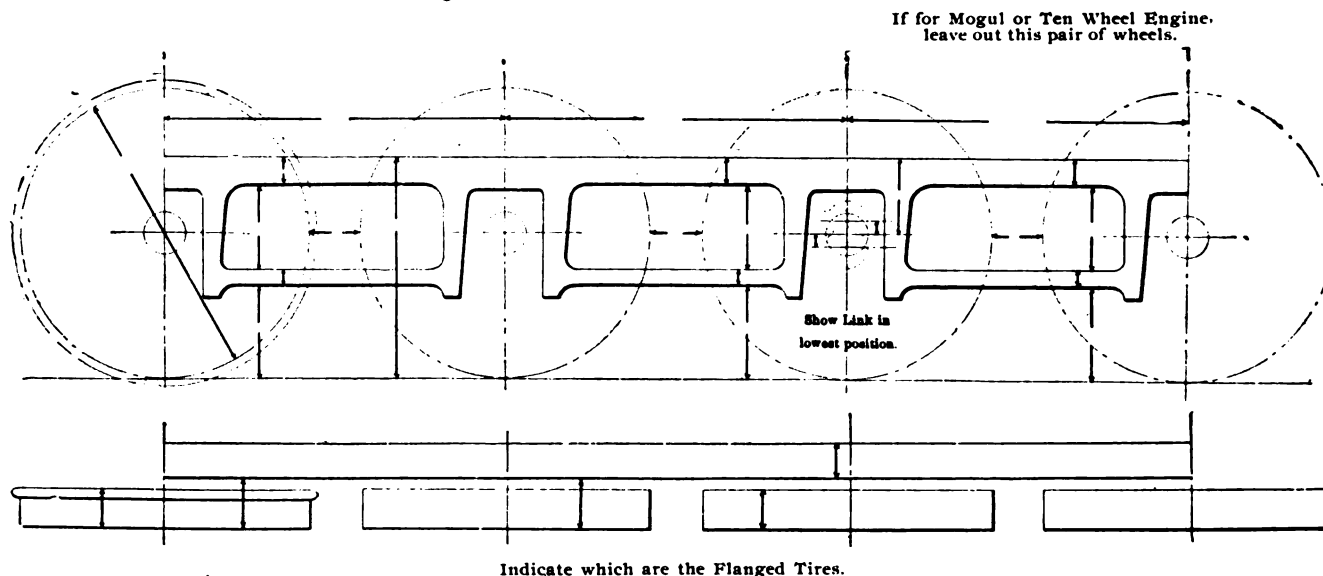


OUTSIDE EQUALIZED PRESSURE DRIVER BRAKE.  
(For three or more pairs of Driving Wheels.)  
PLATE E11.



## The Westinghouse Automatic Brake.

### DIAGRAM FOR DESIGNING OUTSIDE EQUALIZED PRESSURE DRIVER BRAKE.



Fill in carefully all dimensions as indicated by dimension lines, and sketch in ink all tie rods, expansion plates, and any other parts that are attached to the lower rail of the frames, giving their dimensions and the exact position of the bolts by which they are attached to the frame, always giving distance of all parts from nearest wheel center.

Lay out to scale, on reverse of diagram, all of the frame back of the rear pair of drivers, showing all attachments; also that part of the frame between the forward jaw and the saddle, giving the exact location of all bolts by which parts are attached to frames or frames bolted together. Where tracings, drawings or blue prints can be furnished (which are preferable), only the data required in above paragraph need be given.

#### ADDITIONAL INFORMATION REQUIRED.

Distance between Frames across Engine.....

Distance between Flanged Tires across Engine..... Builder's Name.....

Distance between Blank Tires across Engine.....

Distance between Frame and Side Rod.....

Weight of Engine..... Name of Road.....

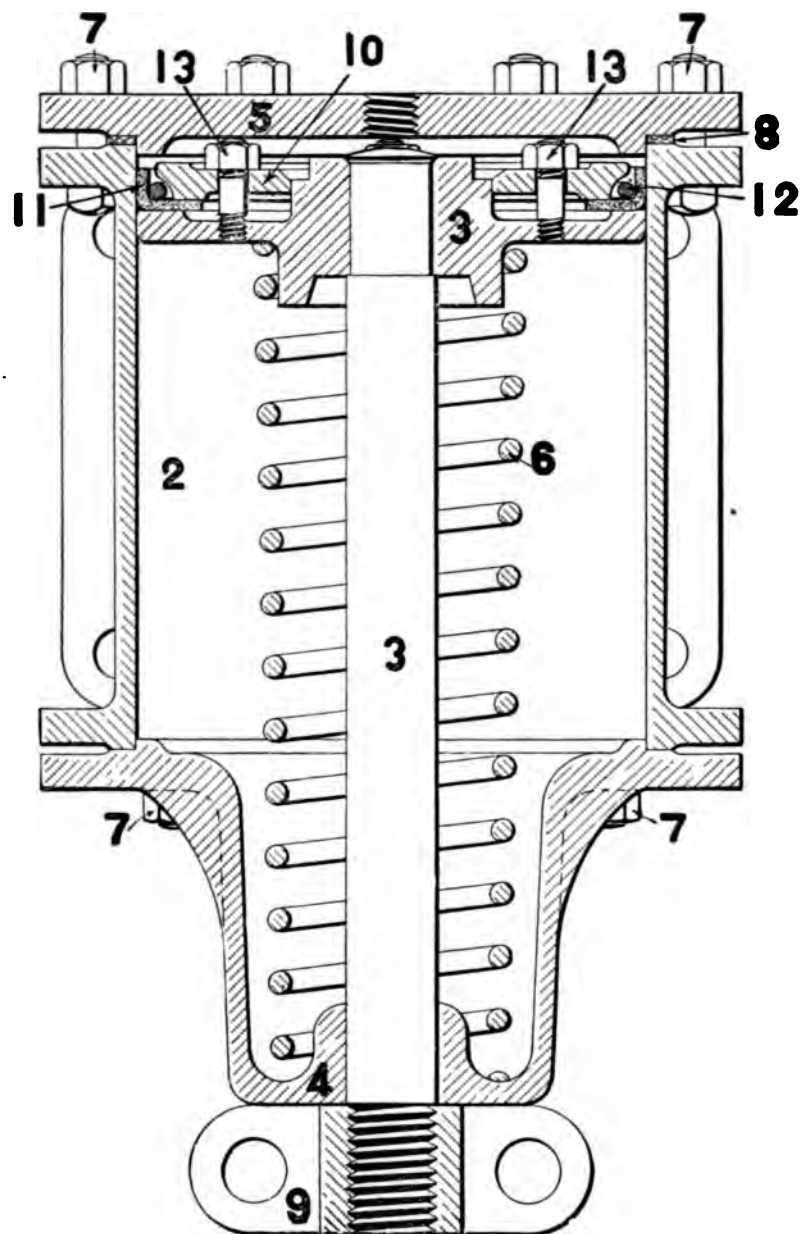
Weight on Drivers.....

Thickness of Tire.....

Was Engine light or loaded when measured..... Number or Class of Engine.....

The above diagram shows the information necessary from which to make working drawings for Driving Wheel Brakes for Engines having more than two pairs of driving wheels, blanks for which will be furnished on application.

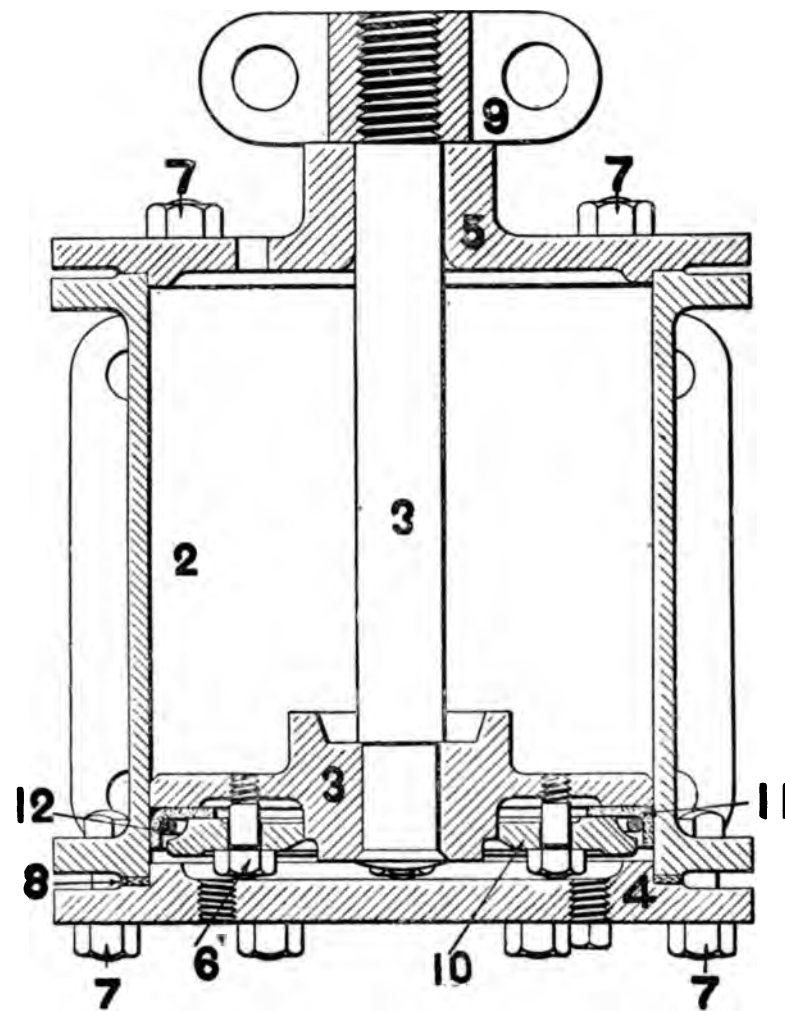
PUSH DOWN TYPE DRIVER BRAKE CYLINDER.  
 PLATE E12.





FUSH UP TYPE DRIVER BRAKE CYLINDER.

PLATE E14.



**The Westinghouse Automatic Brake.**

**PUSH UP TYPE DRIVER BRAKE CYLINDER**

(See Nos. 16, 17, 18 and 19, Plate E19.)

**PLATE E14.**

For ordering Repair Parts.

**DETAILS.**

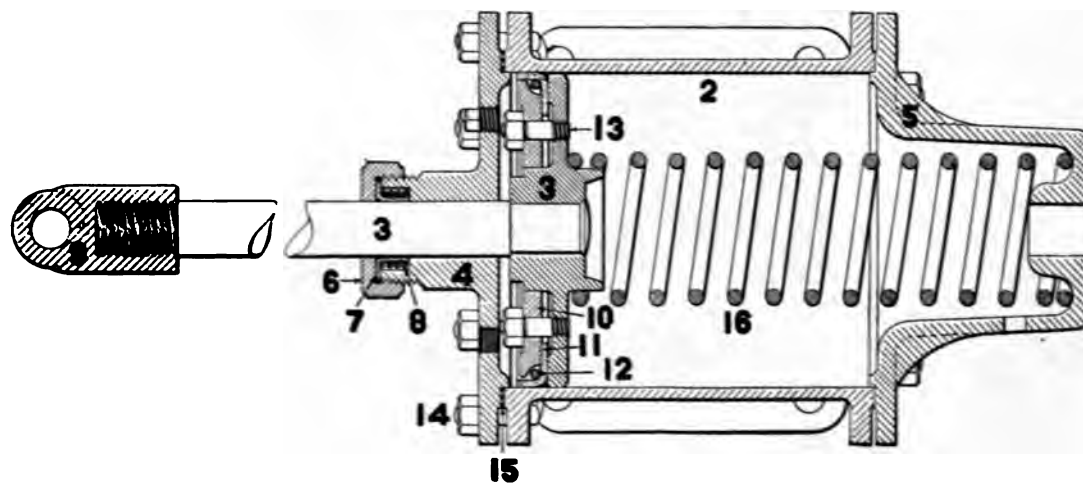
No.		No.	
2.	Cylinder Body.	8.	Gasket.
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	9.	Cross Head (select kind desired from Plate E20).
4.	Lower Head.	10.	Follower.
5.	Upper Head.	11.	Piston Packing Leather.
6.	Follower Stud and Nut.	12.	Packing Expander.
7.	Cylinder-head Bolt and Nut.		

**NOTE.**—When ordering detail parts for repairs, give numbers of parts desired, as above, and *number* of Cylinder intended for, from Plate E19. When ordering *this type* of Cylinder, COMPLETE, specify number, size and stroke of Cylinder from Plate E19, and number of Cross-head desired from Plate E20.

Orders must give number of Plate and of piece wanted.

TYPE "A" PULL DRIVER BRAKE CYLINDER.

PLATE E15.



## The Westinghouse Automatic Brake.

### TYPE "A" PULL DRIVER BRAKE CYLINDER.

PLATE E15.

For ordering Repair Parts.

#### DETAILS.

No.		No.	
2.	Cylinder Body.	9.	Cross Head (select kind desired from Plate E20).
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	10.	Follower.
4.	Front Head.	11.	Piston Packing Leather.
5.	Back Head.	12.	Packing Expander.
6.	Piston-rod Packing Nut.	13.	Follower Stud and Nut.
7.	Piston-rod Cup Leather.	14.	Cylinder-head Bolt and Nut.
8.	Piston-rod Packing Spring.	15.	Gasket.
		16.	Release Spring.

NOTE.—When ordering detail parts for repairs, give numbers of the parts desired, as above, and *number* of Cylinder intended for, from Plate E19. When ordering *this type* of Cylinder, COMPLETE, specify number, size and stroke of Cylinder from Plate E19, and number of Cross Head desired from Plate E20.

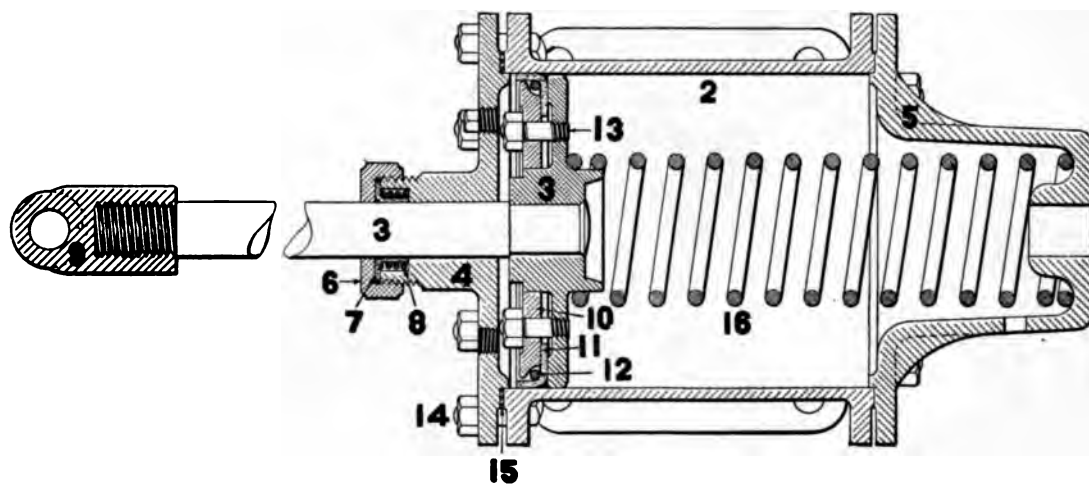
Cylinders Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 14 and 21, as shown in Plate E19, when required, may be converted into Type "A" Pull Cylinders.

Orders must give number of Plate and of piece wanted.



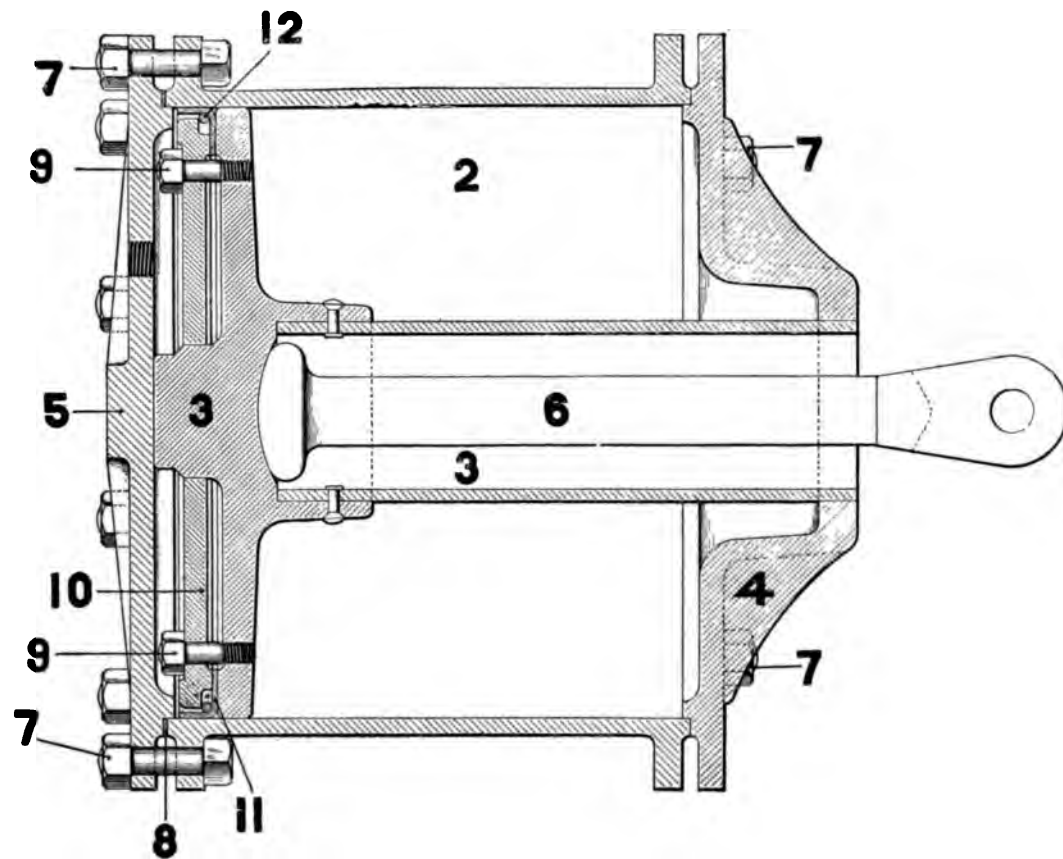
TYPE "A" PULL DRIVER BRAKE CYLINDER.

PLATE E15.



TYPE "C" SPECIAL DRIVER BRAKE CYLINDER.

PLATE E17.



## The Westinghouse Automatic Brake.

### TYPE "C" SPECIAL DRIVER BRAKE CYLINDER.

PLATE E17.

For ordering Repair Parts.

#### DETAILS.

No.		No.	
2.	Cylinder Body.	7.	Cylinder Head Bolt and Nut.
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	8.	Gasket.
4.	Back Head.	9.	Follower Stud and Nut.
5.	Front Head.	10.	Follower.
6.	Push Rod, complete.	11.	Piston Packing Leather.
		12.	Packing Expander.

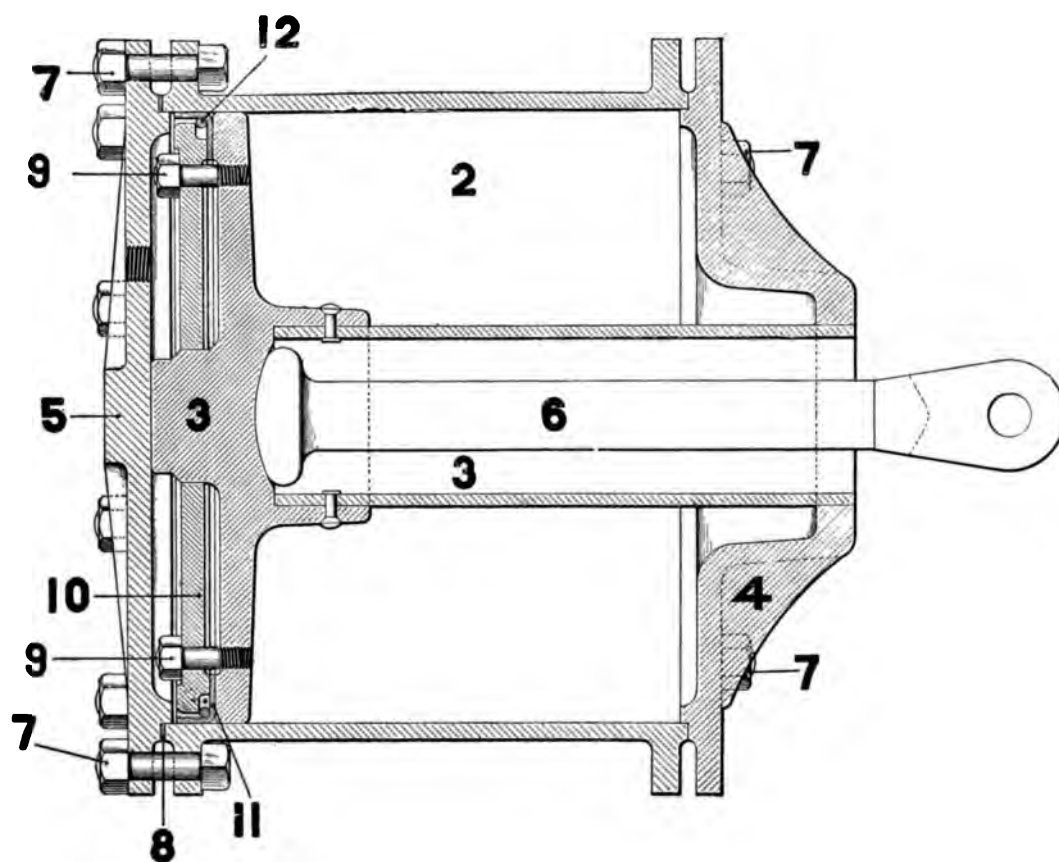
NOTE.—When ordering detail parts for repairs, give numbers of the parts desired, as above, and *number* of Cylinder intended for, from Plate E19. When ordering *this type* of Cylinder, COMPLETE, specify number, size and stroke of Cylinder from Plate E19, and number of Cross Head from Plate E20.

Cylinders Nos. 11, 13, 15, 22, 33, 44, 55, 66, 77, 88 and 99, as shown in Plate E19, when required, may be converted into Type "C" Special Cylinders.

Orders must give number of Plate and of piece wanted.

TYPE "C" SPECIAL DRIVER BRAKE CYLINDER.

PLATE E17.



## The Westinghouse Automatic Brake.

### TYPE "C" SPECIAL DRIVER BRAKE CYLINDER.

PLATE E17.

For ordering Repair Parts.

#### DETAILS.

No.		No.	
2.	Cylinder Body.	7.	Cylinder Head Bolt and Nut.
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	8.	Gasket.
4.	Back Head.	9.	Follower Stud and Nut.
5.	Front Head.	10.	Follower.
6.	Push Rod, complete.	11.	Piston Packing Leather.
		12.	Packing Expander.

NOTE.—When ordering detail parts for repairs, give numbers of the parts desired, as above, and *number* of Cylinder intended for, from Plate E19. When ordering *this type* of Cylinder, COMPLETE, specify number, size and stroke of Cylinder from Plate E19, and number of Cross Head from Plate E20.

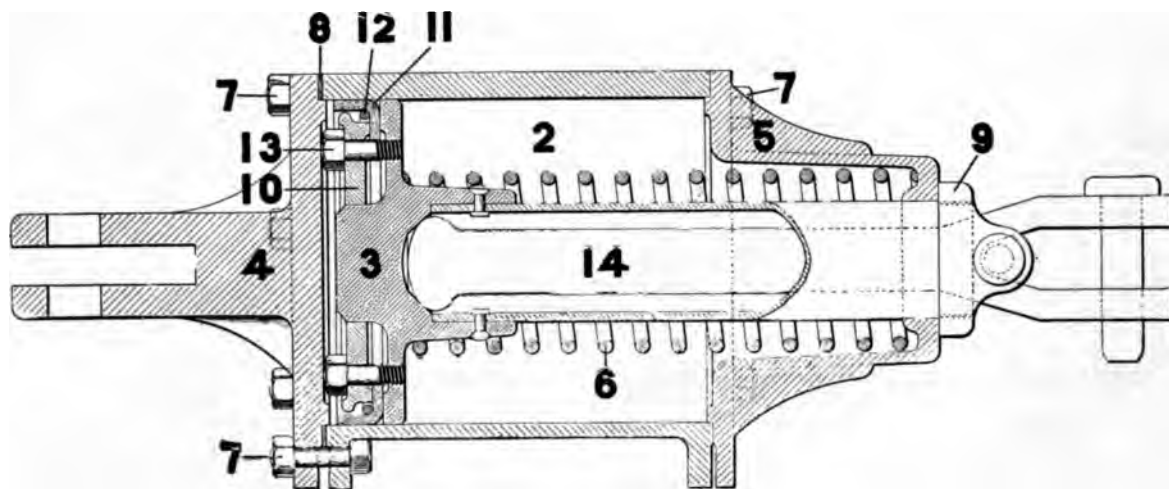
Cylinders Nos. 11, 13, 15, 22, 33, 44, 55, 66, 77, 88 and 99, as shown in Plate E19, when required, may be converted into Type "C" Special Cylinders.

Orders must give number of Plate and of piece wanted.



TYPE "D" ENGINE TRUCK BRAKE CYLINDER.

PLATE E18.



## The Westinghouse Automatic Brake.

### TYPE "D" ENGINE TRUCK BRAKE CYLINDER.

PLATE E18.

For ordering Repair Parts.

#### DETAILS.

No.		No.	
2.	Cylinder Body.	8.	Gasket.
3.	Piston Head and Rod, (Includes No. 9, and Follower Studs and Nuts).	9.	Push Rod Holder.
4.	Front Head.	10.	Follower.
5.	Back Head.	11.	Piston Packing Leather.
6.	Release Spring.	12.	Packing Expander.
7.	Cylinder Head Bolt and Nut.	13.	Follower Stud and Nut.
		14.	Push Rod, complete.

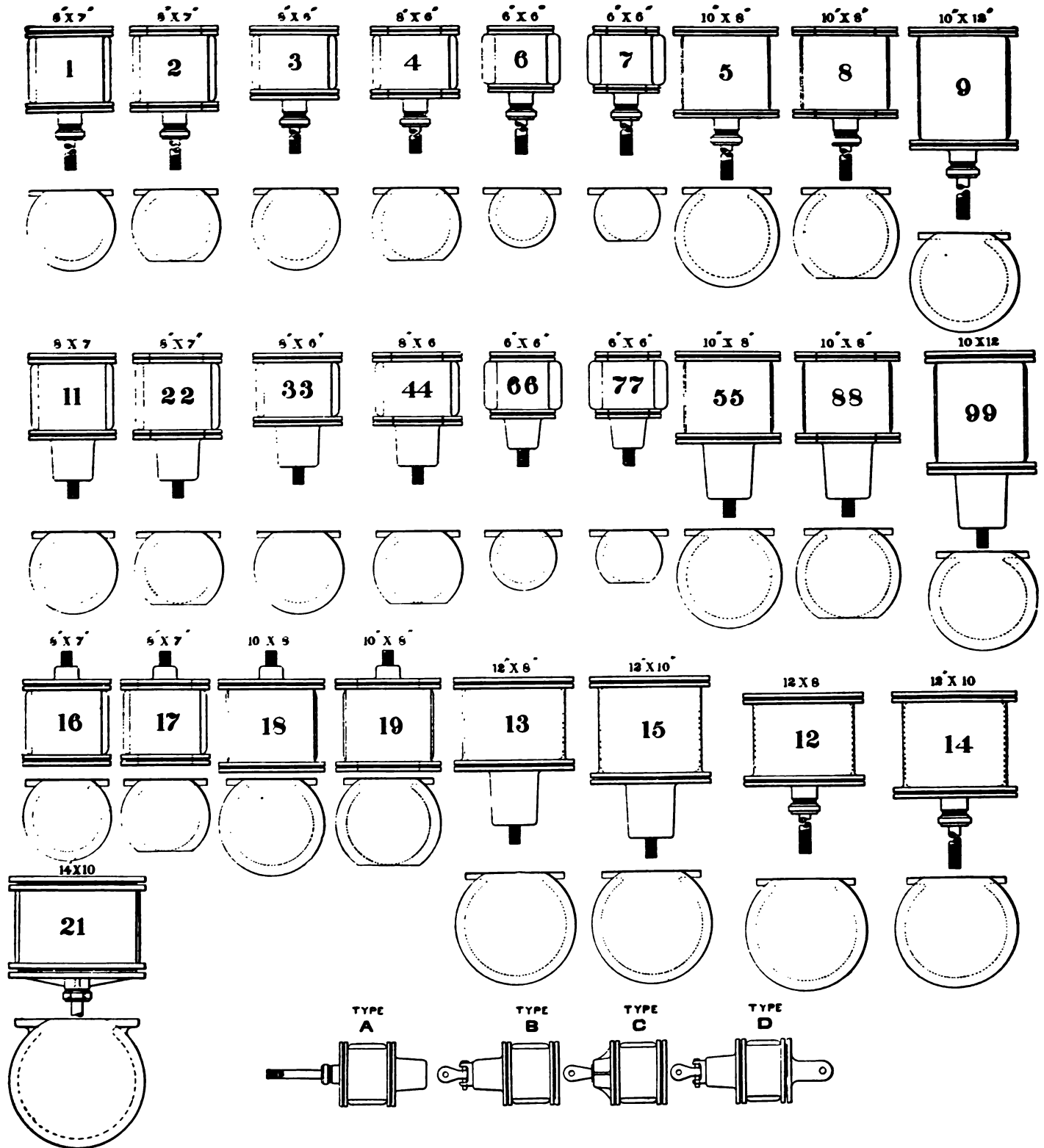
NOTE.—When ordering detail parts for repairs, give numbers of the parts desired, as above, and *number* of Cylinder intended for, from Plate E19. When ordering *this type* of Cylinder, COMPLETE, specify number, size and stroke of Cylinder from Plate E19, and number of Cross Head from Plate E20.

Cylinders Nos. 11, 13, 15, 22, 33, 44, 55, 66, 77, 88 and 99, as shown in Plate E19, when required, may be converted into Type "D" Cylinders.

Orders must give number of Plate and of piece wanted.

# DRIVING WHEEL BRAKE CYLINDERS.

PLATE E19.



## The Westinghouse Automatic Brake.

### DRIVING WHEEL BRAKE CYLINDERS

#### PLATE E19.

- No.
1. Eight in. by Seven in. Pull Up Driver Brake Cylinder (outer flanges full).
  2. Eight in. by Seven in. Pull Up Driver Brake Cylinder (outer flanges removed).
  3. Eight in. by Six in. Pull Up Driver Brake Cylinder (outer flanges full).
  4. Eight in. by Six in. Pull Up Driver Brake Cylinder (outer flanges removed).
  5. Ten in. by Eight in. Pull Up Driver Brake Cylinder (outer flanges full).
  6. Six in. by Six in. Pull Up Driver Brake Cylinder (outer flanges full).
  7. Six in. by Six in. Pull Up Driver Brake Cylinder (outer flanges removed).
  8. Ten in. by Eight in. Pull Up Driver Brake Cylinder (outer flanges removed).
  9. Ten in. by Twelve in. Pull Up Driver Brake Cylinder.
  11. Eight in. by Seven in. Push Down Driver Brake Cylinder (outer flanges full).
  12. Twelve in. by Eight in. Pull Up Driver Brake Cylinder.
  13. Twelve in. by Eight in. Push Down Driver Brake Cylinder.
  14. Twelve in. by Ten in. Pull Up Driver Brake Cylinder.
  15. Twelve in. by Ten in. Push Down Driver Brake Cylinder.
  16. Eight in. by Seven in. Push Up Driver Brake Cylinder (outer flanges full).
  17. Eight in. by Seven in. Push Up Driver Brake Cylinder (outer flanges removed).
  18. Ten in. by Eight in. Push Up Driver Brake Cylinder (outer flanges full).
  19. Ten in. by Eight in. Push Up Driver Brake Cylinder (outer flanges removed).
  21. Fourteen in. by Ten in. Pull Up Driver Brake Cylinder.
  22. Eight in. by Seven in. Push Down Driver Brake Cylinder (outer flanges removed).
  33. Eight in. by Six in. Push Down Driver Brake Cylinder (outer flanges full).
  44. Eight in. by Six in. Push Down Driver Brake Cylinder (outer flanges removed).
  55. Ten in. by Eight in. Push Down Driver Brake Cylinder (outer flanges full).
  66. Six in. by Six in. Push Down Driver Brake Cylinder (outer flanges full).
  77. Six in. by Six in. Push Down Driver Brake Cylinder (outer flanges removed).
  88. Ten in. by Eight in. Push Down Driver Brake Cylinder (outer flanges removed).
  99. Ten in. by Twelve in. Push Down Driver Brake Cylinder.

\*Type "A" Pull Driver Brake Cylinder.

\* " "B" Push " " "

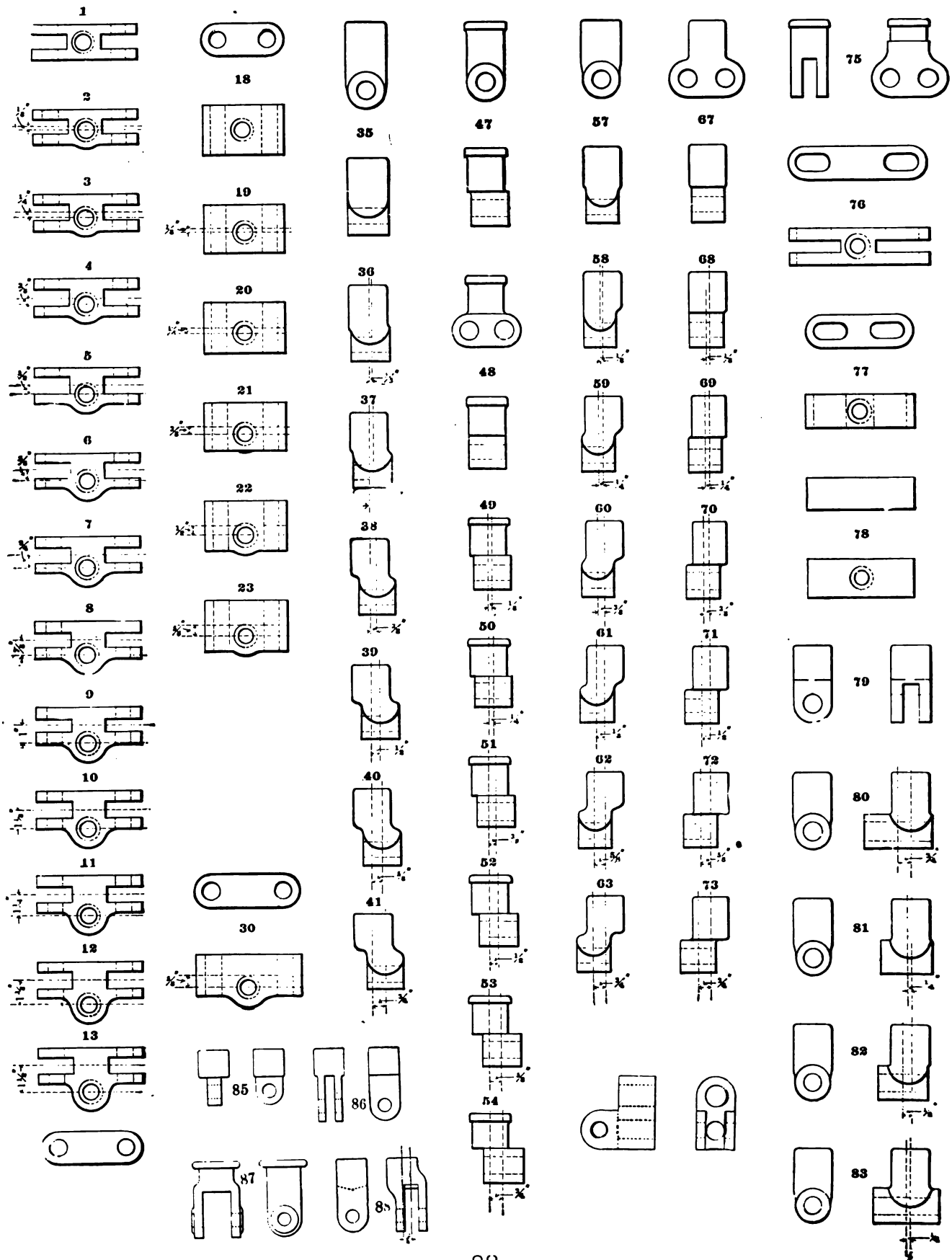
\* " "C" Special " " "

\* " "D" Engine Truck " " "

\*Specify number of any of above suitable Brake Cylinders in connection with letters A, B, C and D, when ordering Cylinders of these particular types.

Orders must give number, size and stroke of Cylinder wanted.

CROSS HEADS FOR DRIVING WHEEL BRAKE CYLINDERS.  
PLATE E20.





**The Westinghouse Automatic Brake.**

PISTON CROSS HEADS  
FOR DRIVING WHEEL BRAKE CYLINDERS.  
PLATE F20.

Order by Plate and Number.

Orders must give number of Cross Head wanted

RESERVOIRS.  
PLATE E21.

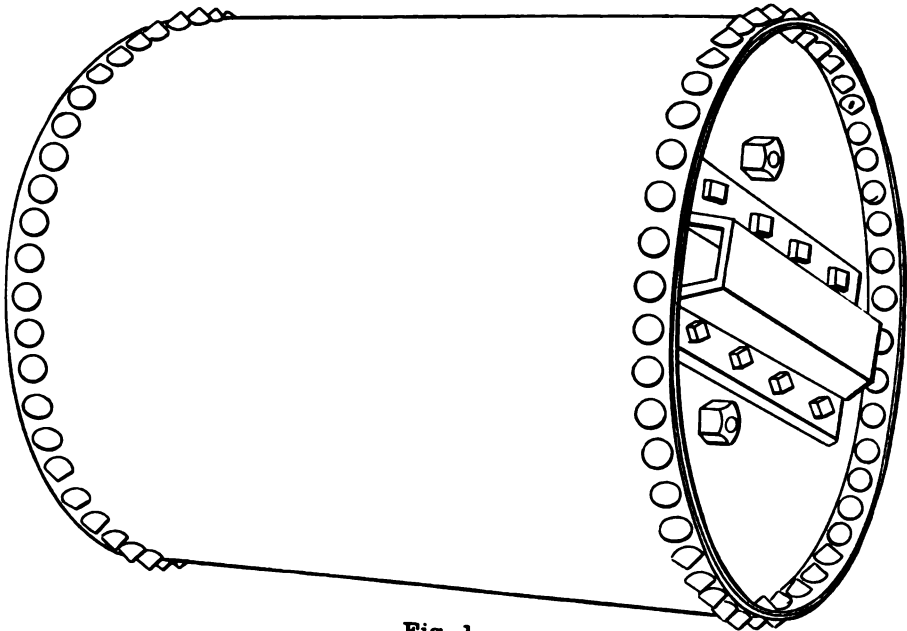


Fig. 1.

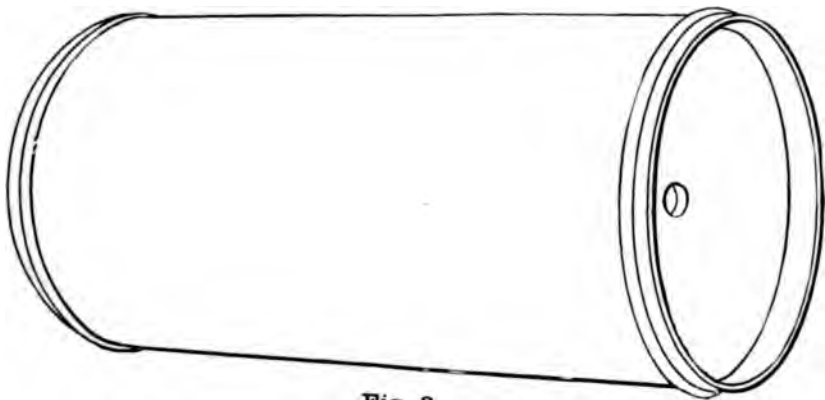


Fig. 2.

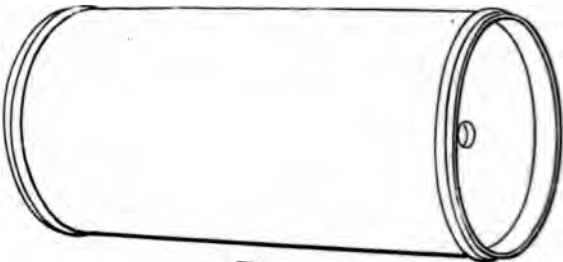


Fig. 4.

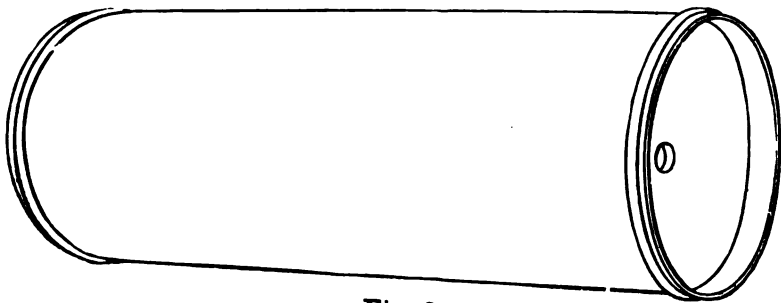


Fig. 3.

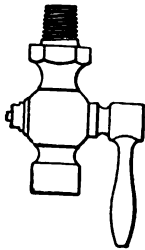


Fig. 5.

## The Westinghouse Automatic Brake.

### RESERVOIRS.

PLATE E21.

SIZES.

<div>FIG. 1.</div> <div>Main Reservoir, -</div>	{	22½ in. by 34 in. (outside), about 11,200 cubic inches capacity.
		24½ " 34 " " " 14,000 " " "
		26½ " 34 " " " 15,800 " " "
		20½ " 41 " " " 12,200 " " "
		22½ " 41 " " " 14,000 " " "
		24½ " 41 " " " 17,400 " " "
		26½ " 41 " " " 20,000 " " "

NOTE.—Main Reservoir Capacity for Passenger Engines should not be less than 16,000, and for Freight Engines not less than 20,000 cubic inches.

FIG. 2.

Standard 16 inch by 33 inch Auxiliary Reservoir. (For Schedule P, and 12 inch and 14 inch Driver Brake Cylinders).

FIG. 3.

Standard 12 inch by 33 inch Auxiliary Reservoir. (For Schedule A<sup>1</sup>, where Driver Brake Cylinders are 10 inches in diameter; also for 10 inch Tender Cylinders and Schedule C<sup>1</sup>).

FIG. 4.

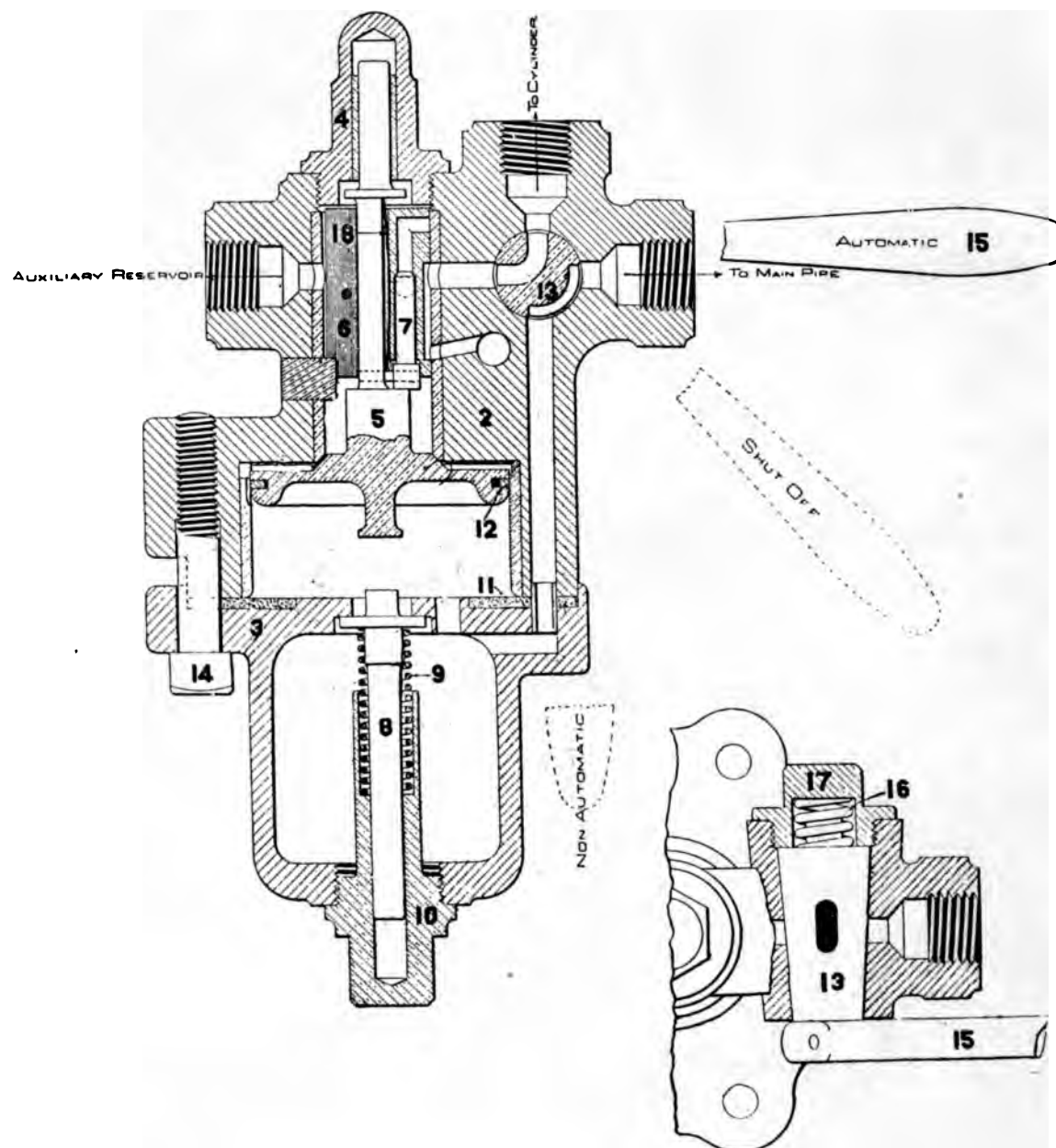
Standard 10 inch by 24 inch Auxiliary Reservoir. (For Schedule A<sup>1</sup>, where Driver Brake Cylinders are 8 inches diameter or under, and for Schedule B<sup>1</sup>, with 8 inch Tender Cylinder).

FIG. 5.

Reservoir Drain Cock.

Orders must give Figure number, and size of Reservoir wanted.

TRIPLE VALVE.  
(For Schedules A' and B')  
PLATE E22.



## The Westinghouse Automatic Brake.

### TRIPLE VALVE.

FOR ENGINES AND TENDERS.

PLATE E22.

No. 1. Triple Valve, complete.

#### DETAILS.

No.		No.	
2.	Triple Valve Case.	11.	Leather Gasket.
3.	Lower Cap.	12.	Piston Packing Ring.
4.	Upper Cap.	13.	Four-way Cock Key.
5.	Piston.	14.	Bolt.
6.	Slide Valve.	15.	Handle.
7.	Graduating Valve.	16.	Key Spring.
8.	Graduating Stem.	17.	Key Cap.
9.	Graduating-stem Spring.	18.	Slide Valve Spring.
10.	Bottom Nut.		

Orders must give number of Plate and of piece wanted.



TENDER CYLINDERS.

PLATE E23.

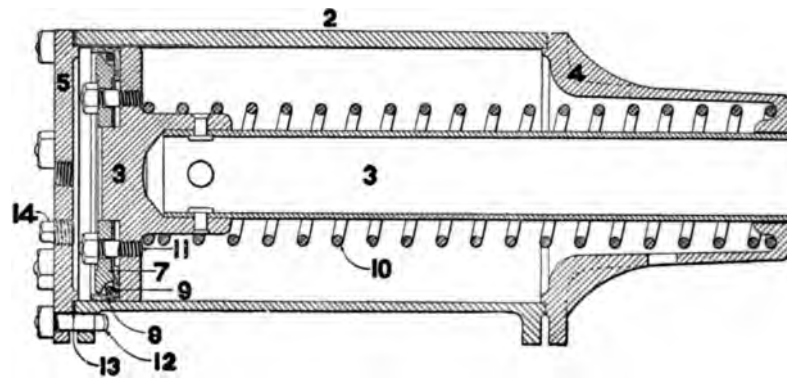


Fig. 1.

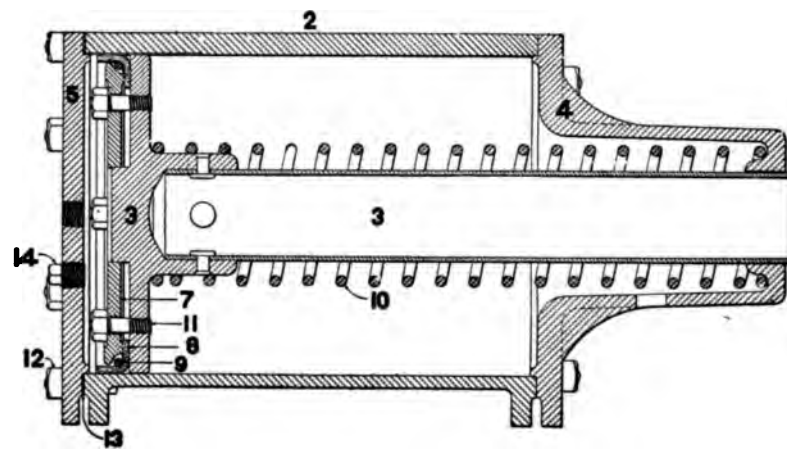


Fig. 2.

## The Westinghouse Automatic Brake.

### TENDER CYLINDERS.

PLATE E23.

FIG. 1.

\*No. 1. Eight Inch Tender Cylinder, complete.

#### DETAILS.

No.		No.	
2.	Cylinder Body.	9.	Packing Expander.
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	10.	Release Spring.
4.	Back Head.	11.	Follower Stud and Nut.
5.	Front Head.	12.	Cylinder-head Bolt and Nut.
7.	Follower.	13.	Gasket.
8.	Packing Leather.	14.	Oiling Plug.

FIG. 2.

‡No. 1. Ten Inch Tender Cylinder, complete.

#### DETAILS.

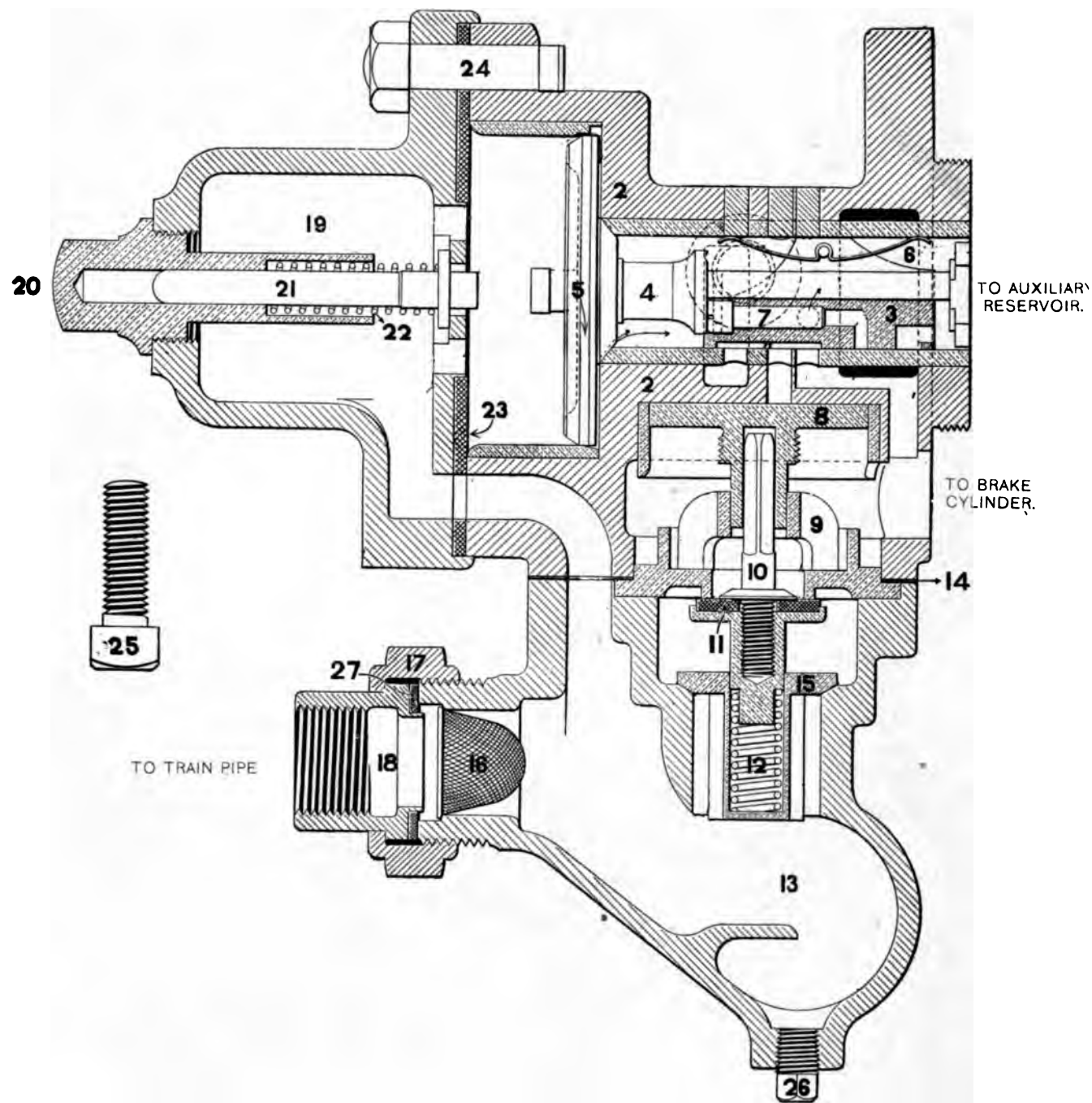
No.		No.	
2.	Cylinder Body.	9.	Packing Expander.
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	10.	Release Spring.
4.	Back Head.	11.	Follower Stud and Nut.
5.	Front Head.	12.	Cylinder-head Bolt and Nut.
7.	Follower.	13.	Gasket.
8.	Packing Leather.	14.	Oiling Plug.

Orders must give number of Plate and of piece wanted.

\*The Eight Inch Tender Cylinder should be used in connection with a 10 inch x 24 inch Auxiliary Reservoir on Tenders whose light weight does not exceed 36,000 pounds.

‡The Ten Inch Tender Cylinder should be used in connection with a 12 inch x 33 inch Auxiliary Reservoir on Tenders whose light weight is in excess of 36,000 pounds.

QUICK ACTION PASSENGER TRIPLE VALVE.  
PLATE E24.



## The Westinghouse Automatic Brake.

### \*QUICK ACTION PASSENGER TRIPLE VALVE.

PLATE E24.

No. 1. Standard Passenger Triple Valve, complete.

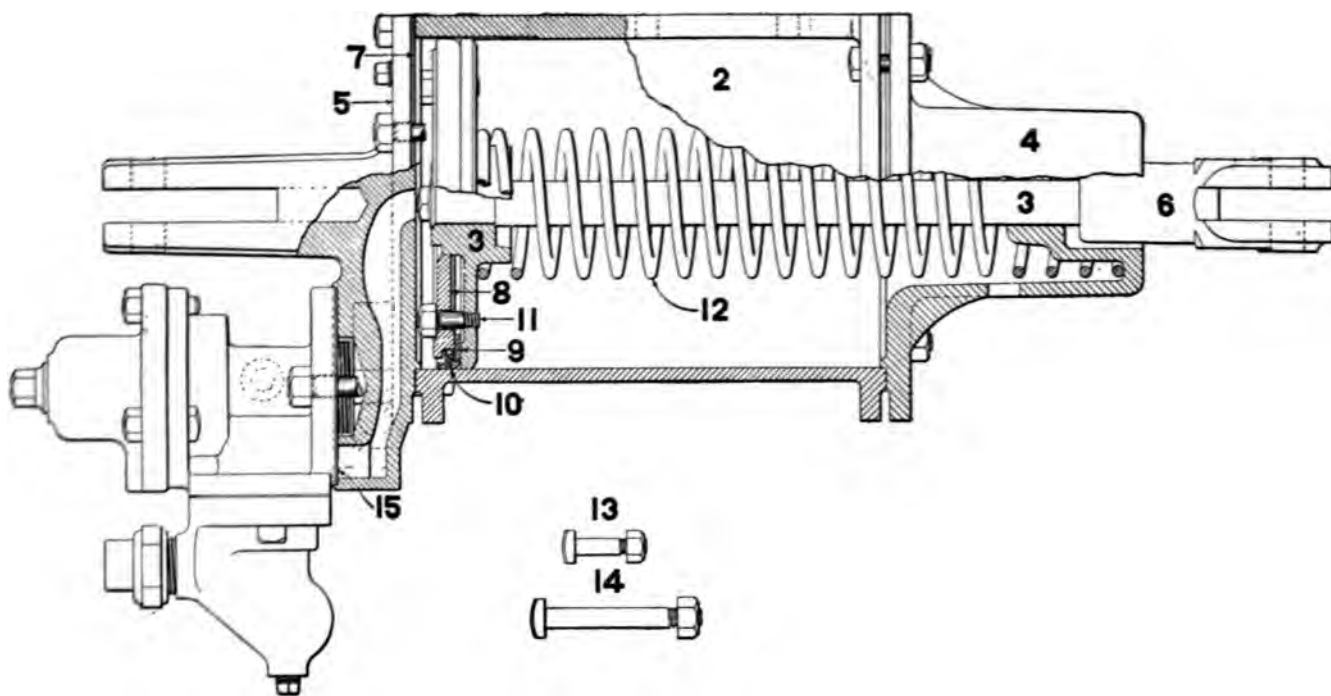
#### DETAILS.

No.		No.	
2.	Triple-valve Body.	15.	Check Valve.
3.	Slide Valve.	16.	Strainer.
4.	Piston.	17.	Union Nut.
5.	Piston Packing Ring.	18.	Union Swivel.
6.	Slide Valve Spring.	19.	Drain Cup.
7.	Graduating Valve.	20.	Graduating-stem Nut.
8.	Emergency-valve Piston.	21.	Graduating Stem.
9.	Emergency-valve Seat.	22.	Graduating Spring.
10.	Emergency Valve.	23.	Leather Gasket.
11.	Rubber Seat.	24.	Bolt and Nut.
12.	Check-valve Spring.	25.	Half inch Cap Screw.
13.	Check-valve Case.	26.	One-half inch Plug.
14.	Check-valve Case Gasket.	27.	Union Gasket.

Orders must give number of Plate and of piece wanted.

\*Passenger Triple Valves may be distinguished from Freight Triple Valves by a Letter P being cast upon the outside of the Valve Body, and must not be used in Freight service.

•TEN INCH CAR CYLINDER.  
PLATE E25.



\* For use on Standard Gauge Passenger Equipment Cars whose light weight  
does not exceed 55,000 pounds.

**The Westinghouse Automatic Brake.**

**TEN INCH CAR CYLINDER.**

**PLATE E25.**

**No. 1. Ten Inch Car Cylinder, complete.**

**DETAILS.**

No.		No.	
2.	Cylinder Body.	9.	Packing Leather.
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	10.	Packing Expander.
4.	Back Head.	11.	Follower Stud and Nut.
5.	Front Head.	12.	Release Spring.
6.	Cross Head.	13.	Cylinder-head Bolt and Nut.
7.	Gasket.	14.	Triple-valve Bolt and Nut.
8.	Follower.	15.	Triple-valve Gasket.

Orders must give number of Plate and of piece wanted.



# DETAILS OF BRAKE APPARATUS.

PLATE E26.

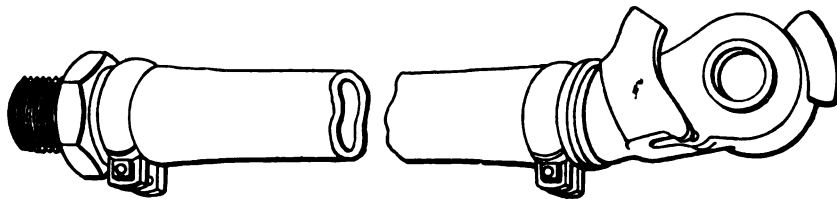


Fig. 1.

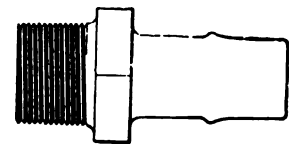


Fig. 4.

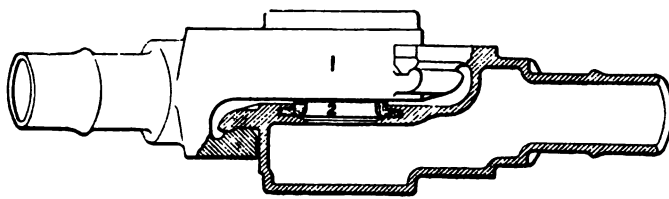


Fig. 2.

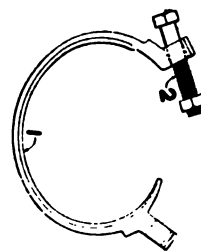


Fig. 5.

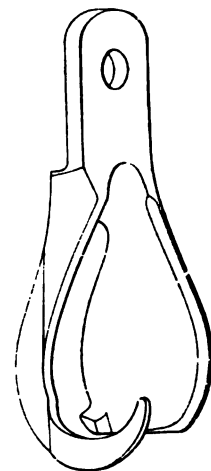


Fig. 6.

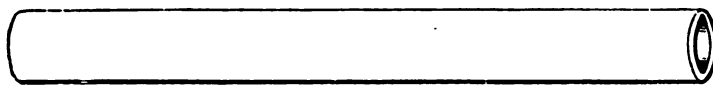


Fig. 3.

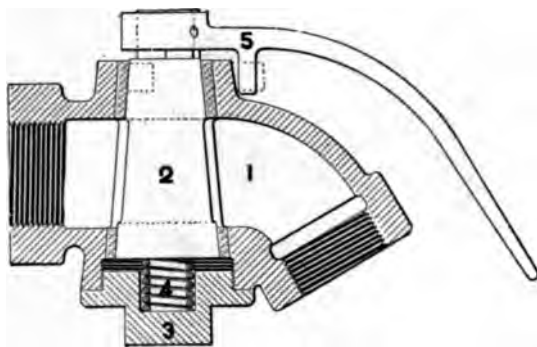


Fig. 7.

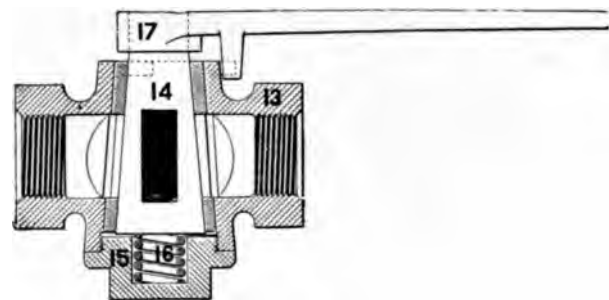


Fig. 8.

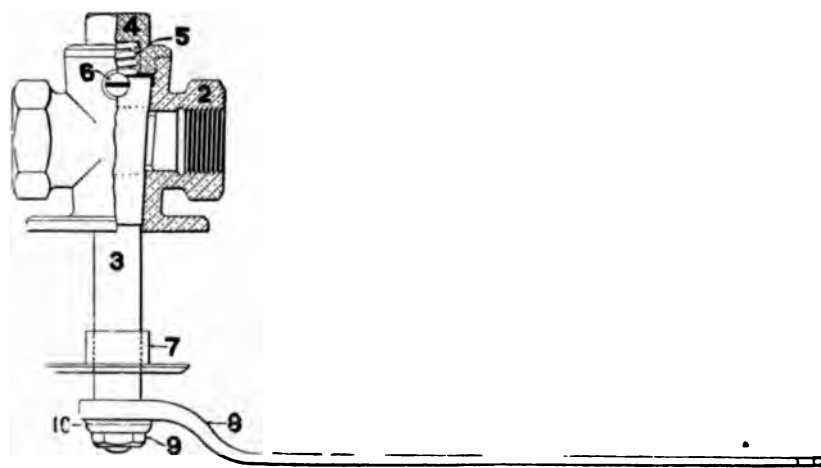


Fig. 9.

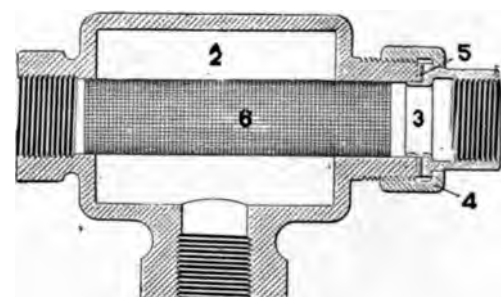


Fig. 10.

## The Westinghouse Automatic Brake.

### DETAILS OF BRAKE APPARATUS.

PLATE E26.

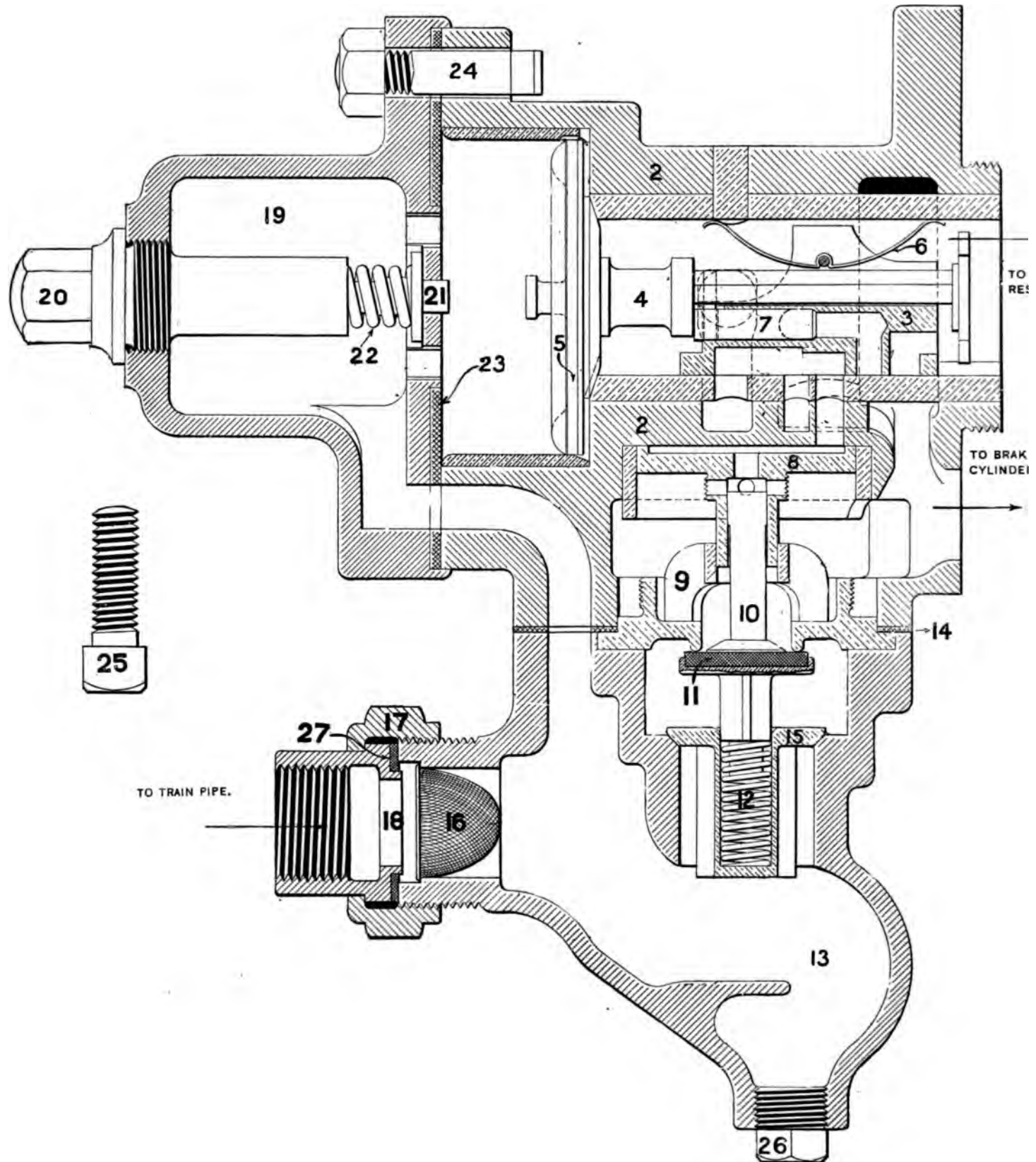
<p style="text-align: center;">FIG. 1.</p> <p>Hose and Coupling, complete. Standard for One inch Pipe (order in pairs).</p> <p style="text-align: center;">FIG. 2.</p> <p>No. 1. Coupling, Standard for One inch Hose (order in pairs). 2. Coupling Packing Ring.</p> <p style="text-align: center;">FIG. 3.</p> <p>Standard One inch Hose.</p> <p style="text-align: center;">FIG. 4.</p> <p>One inch by One and One-fourth inch Hose Nipple.</p> <p style="text-align: center;">FIG. 5.</p> <p>No. 1. Hose Clamp, One inch. 2. Hose-clamp Bolt.</p> <p style="text-align: center;">FIG. 6.</p> <p>One inch Coupling Hook.</p> <p style="text-align: center;">FIG. 7.</p> <p>One inch by One and One-fourth inch Angle Cock, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 1. Angle-cock Body 2. Angle-cock Key. 3. Angle-cock Cap. 4. Angle-cock Key Spring. 5. Angle-cock Handle. 6. One and One-fourth inch to One inch Reducer.</p>	<p style="text-align: center;">FIG. 8.</p> <p>One inch Cut-out Cock, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 13. Cock Body. 14. Cock Key. 15. Cock Cap. 16. Key Spring. 17. Handle.</p> <p style="text-align: center;">FIG. 9.</p> <p>No. 1. Conductor's Valve, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 2. Valve Body. 3. Valve Key. 4. Valve Cap. 5. Key Spring. 6. Key Stop. 7. Key Escutcheon. 8. Valve Handle. 9. Key Nut. 10. Key Washer.</p> <p style="text-align: center;">FIG. 10.</p> <p>No. 1. One inch Car Drain Cup, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 2. Drain Cup Body. 3. One inch Union Swivel. 4. Union Nut. 5. Union Gasket. 6. Strainer.</p>
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Orders must give number of Plate and of piece wanted.

"SPECIAL" QUICK ACTION PASSENGER TRIPLE VALVE.

(Used with 14 Inch Car Cylinder, Plate E28.)

PLATE E27.



## The Westinghouse Automatic Brake.

### "SPECIAL" QUICK ACTION PASSENGER TRIPLE VALVE.

(For Six-wheel Truck Brake).

PLATE E27.

No. 1. "Special" Quick Action Passenger Triple Valve, complete.

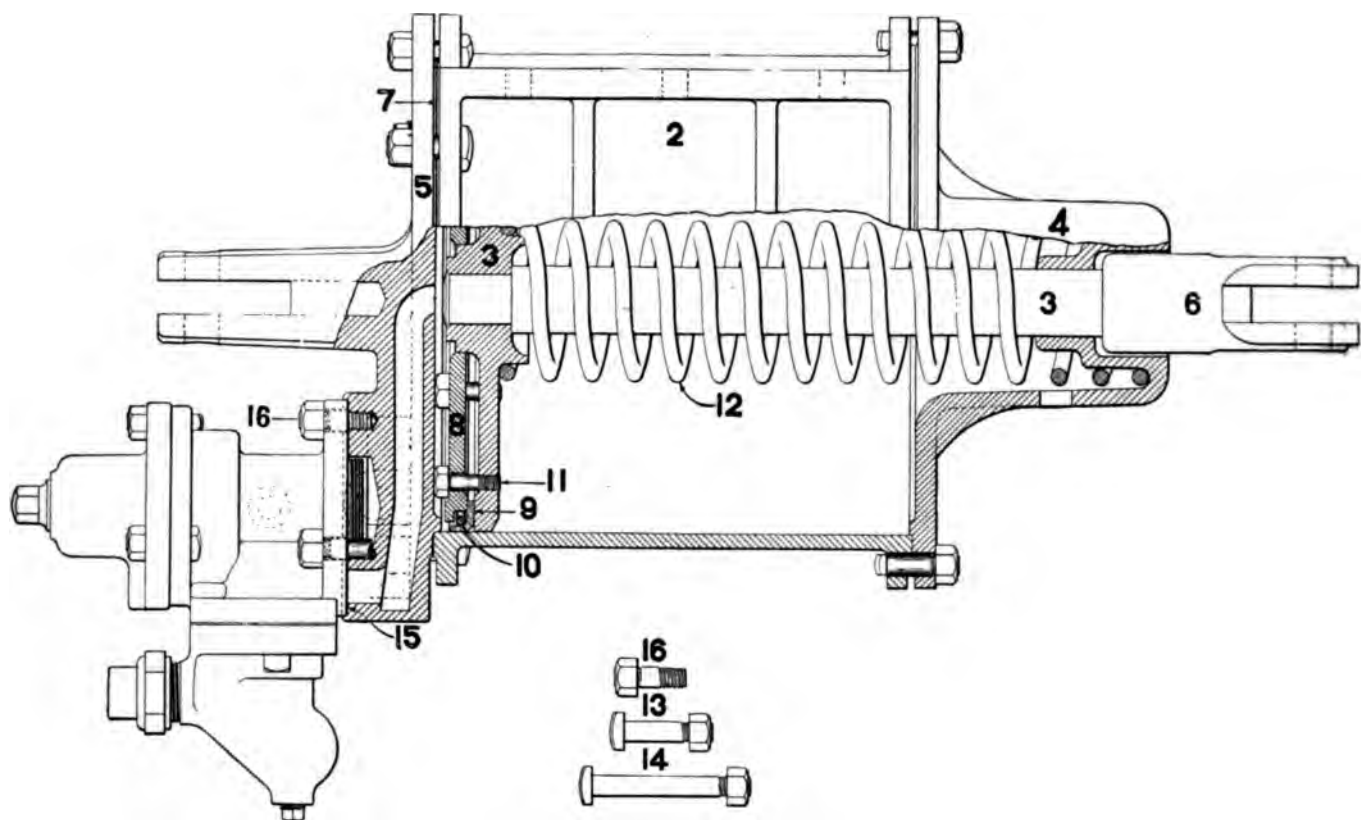
#### DETAILS.

No.		No.	
2.	Triple Valve Body.	15.	Check Valve.
3.	Slide Valve.	16.	Strainer.
4.	Piston.	17.	Union Nut.
5.	Piston Packing Ring.	18.	Union Swivel.
6.	Side-valve Spring.	19.	Drain Cup.
7.	Graduating Valve.	20.	Graduating-stem Nut.
8.	Emergency-valve Piston.	21.	Graduating Stem.
9.	Emergency-valve Seat.	22.	Graduating Spring.
10.	Emergency Valve.	23.	Leather Gasket.
11.	Rubber Seat.	24.	Bolt and Nut.
12.	Check-valve Spring.	25.	Half-inch Cap Screw.
13.	Check-valve Case.	26.	One-half inch Plug.
14.	Check-valve Case Gasket	27.	Union Gasket.

Orders must give number of Plate and of piece wanted.

"SPECIAL" FOURTEEN INCH CAR CYLINDER.

PLATE E28.



For use on Standard Gauge Passenger Equipment Cars whose light weight *exceeds* 55,000 pounds.

## The Westinghouse Automatic Brake.

### "SPECIAL" FOURTEEN INCH CAR CYLINDER.

PLATE E28.

No. 1. Fourteen Inch Car Cylinder, complete.

#### DETAILS.

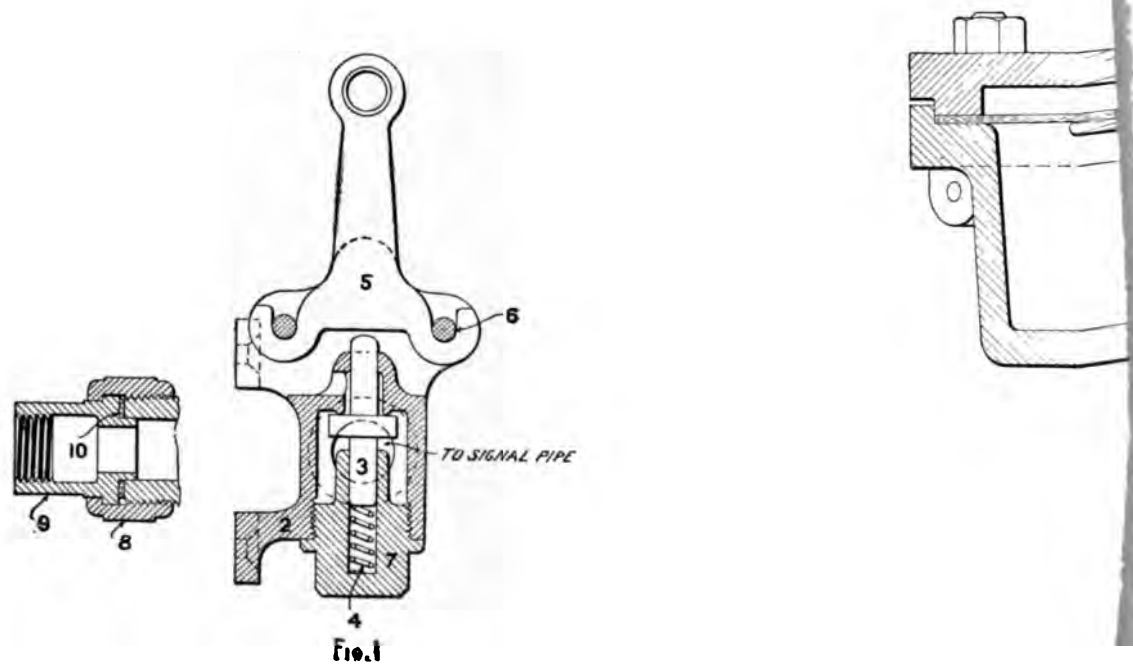
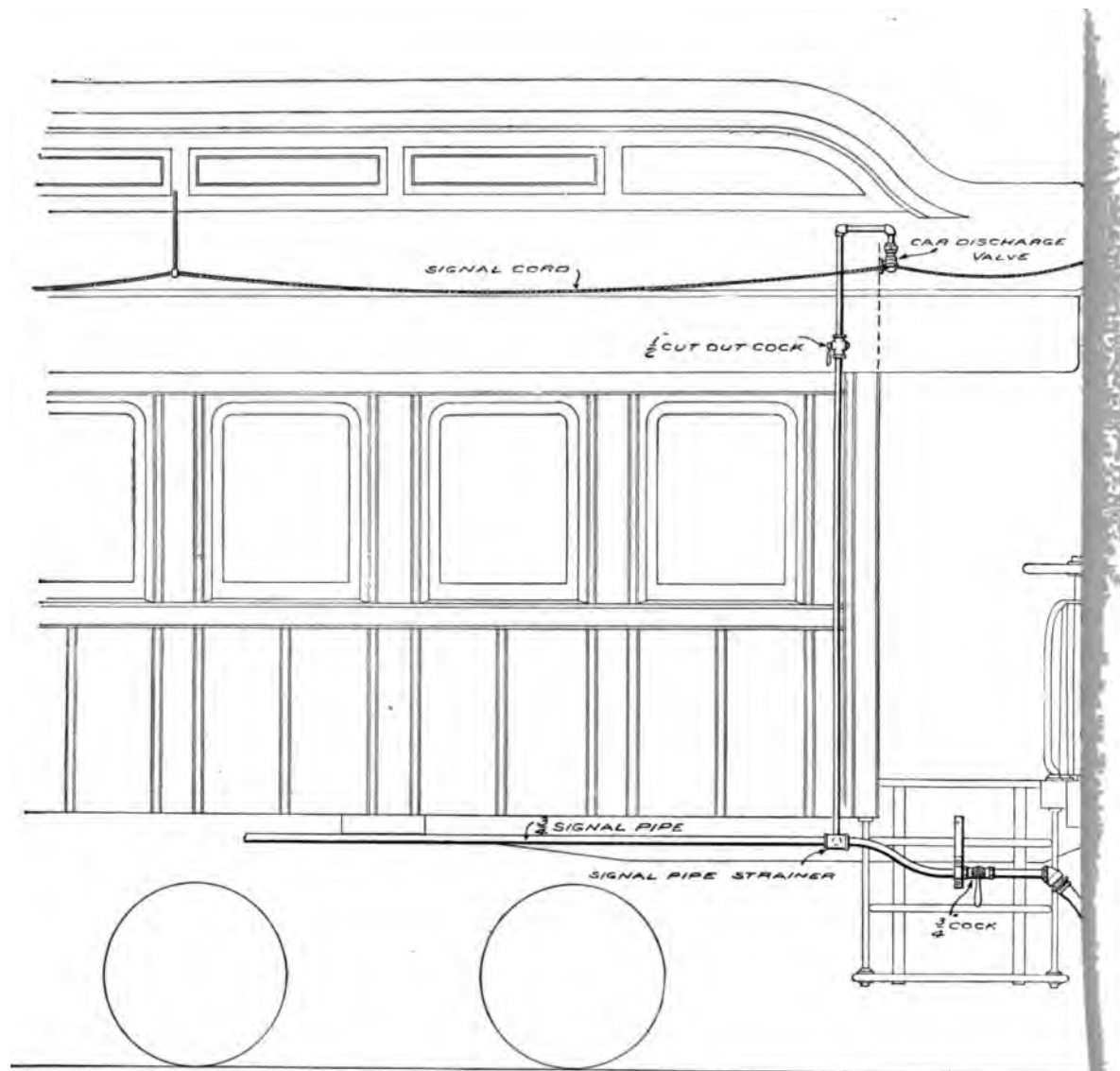
No.		No.	
2.	Cylinder Body.	9.	Packing Leather.
3.	Piston Head and Rod, (Includes Follower Studs and Nuts).	10.	Packing Expander.
4.	Back Head.	11.	Follower Stud and Nut.
5.	Front Head.	12.	Release Spring.
6.	Cross Head.	13.	Cylinder-head Bolt and Nut.
7.	Gasket.	14.	Triple-valve Bolt and Nut.
8.	Follower.	15.	Triple-valve Gasket.
		16.	Triple-valve Stud and Nut.

Orders must give number of Plate and of piece wanted.









DETAILS OF TRAIN AIR SIGNALING APPARATUS.

PLATE E30.

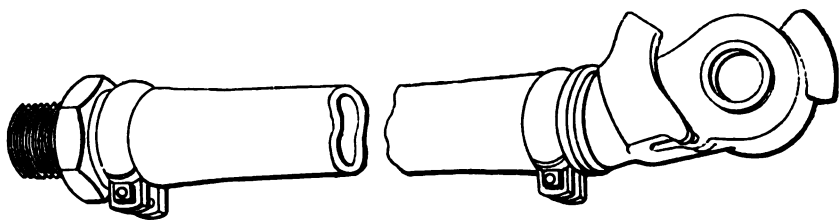


Fig. 1.

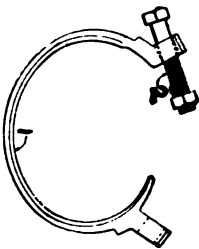


Fig. 4.



Fig. 5.



Fig. 6.

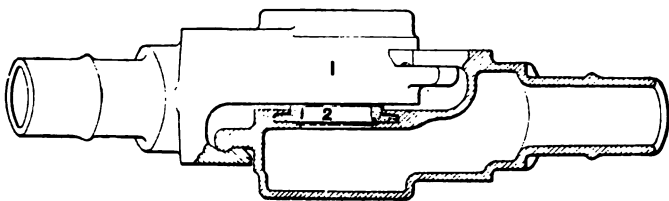


Fig. 2.

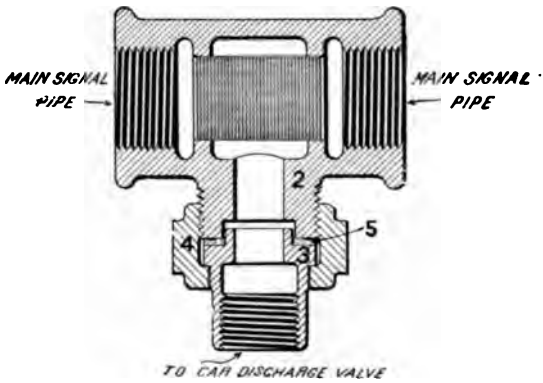


Fig. 7.



Fig. 3.

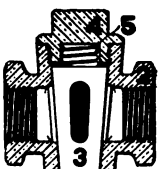


Fig. 8.

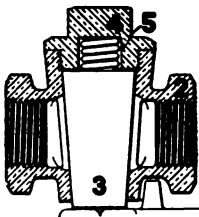


Fig. 9.

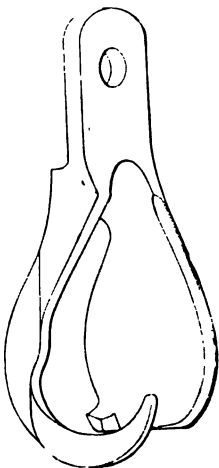


Fig. 10.

## The Westinghouse Automatic Brake.

### DETAILS OF TRAIN AIR SIGNALING APPARATUS.

PLATE E30.

<p style="text-align: center;">FIG. 1.</p> <p>Standard Signal Hose and Coupling, complete, (order in pairs).</p>	<p style="text-align: center;">FIG. 7.</p> <p>No. 1. Signal Pipe Strainer, complete.</p>
<p style="text-align: center;">FIG. 2.</p> <p>No. 1. Signal Coupling, complete, (order in pairs). 2. Coupling Packing Ring.</p>	<p style="text-align: center;">DETAILS.</p> <p>No. 2. Strainer Body. 3. Union Swivel. 4. Union Nut. 5. Gasket.</p>
<p style="text-align: center;">FIG. 3.</p> <p>Standard Signal Hose.</p>	<p style="text-align: center;">FIG. 8.</p> <p>No. 1. One-half inch Cut-out Cock, complete.</p>
<p style="text-align: center;">FIG. 4.</p> <p>No. 1. Hose Clamp. 2. Hose-clamp Bolt.</p>	<p style="text-align: center;">DETAILS.</p> <p>No. 2. Cock Body. 3. Cock Key. 4. Cock Cap. 5. Key Spring. 6. Cock Handle.</p>
<p style="text-align: center;">FIG. 5.</p> <p>One inch by Three-fourths inch Hose Nipple.</p>	<p style="text-align: center;">FIG. 9.</p> <p>No. 1. Three-fourths inch Cock, complete.</p>
<p style="text-align: center;">FIG. 6.</p> <p>Three-fourths inch Angle Fitting.</p>	<p style="text-align: center;">DETAILS.</p> <p>No. 2. Cock Body. 3. Cock Key. 4. Cock Cap. 5. Key Spring. 6. Cock Handle.</p>
	<p style="text-align: center;">FIG. 10.</p> <p>Signal Coupling Hook.</p>

Orders must give number of Plate and of piece wanted.



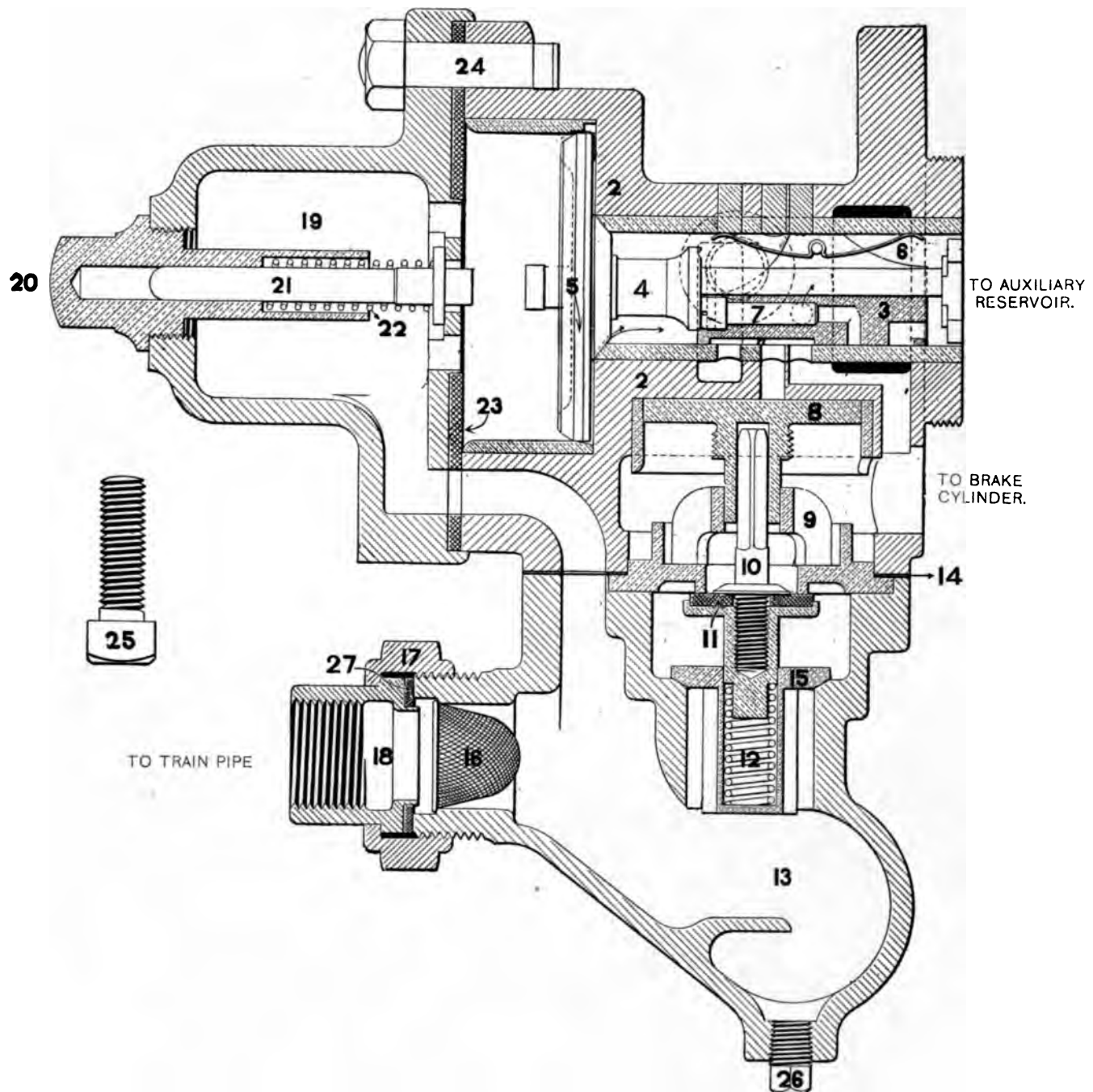








STANDARD QUICK ACTION FREIGHT TRIPLE VALVE.  
 PLATE E32.



## The Westinghouse Automatic Brake.

### STANDARD QUICK ACTION FREIGHT TRIPLE VALVE.

PLATE E32.

No. 1. Standard Quick Action Freight Triple Valve, complete.

#### DETAILS.

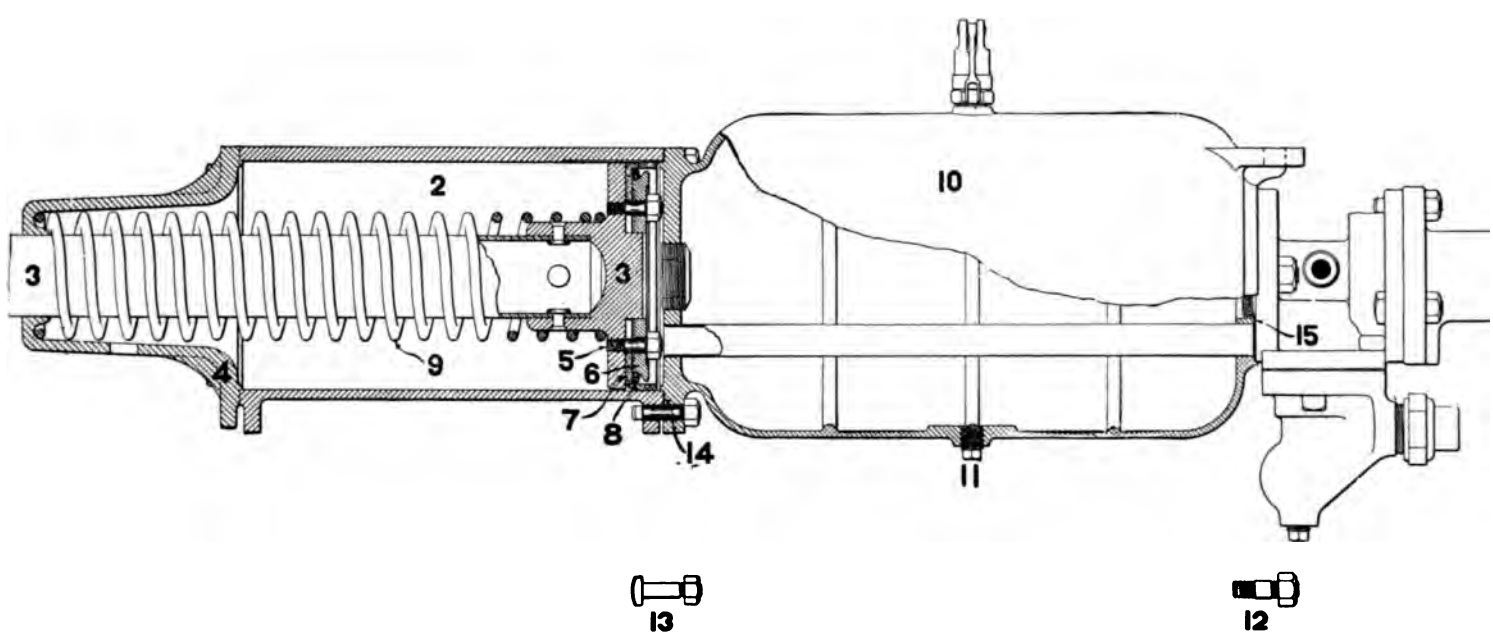
No.		No.	
2.	Triple-valve Body.	15.	Check Valve.
3.	Slide Valve.	16.	Strainer.
4.	Piston.	17.	Union Nut.
5.	Piston Packing Ring.	18.	Union Swivel.
6.	Slide-valve Spring.	19.	Drain Cup.
7.	Graduating Valve.	20.	Graduating-stem Nut.
8.	Emergency-valve Piston.	21.	Graduating Stem.
9.	Emergency-valve Seat.	22.	Graduating Spring.
10.	Emergency Valve.	23.	Leather Gasket.
11.	Rubber Seat.	24.	Bolt and Nut.
12.	Check-valve Spring.	25.	Half-inch Cap Screw.
13.	Check valve Case.	26.	One-half inch Plug.
14.	Check-valve Case Gasket.	27.	Union Gasket.

Orders must give number of Plate and of piece wanted.

STANDARD FREIGHT CYLINDER, RESERVOIR AND TRIPLE VALVE.

(8 in. Diameter by 12 in. Stroke).

PLATE E33.



**The Westinghouse Automatic Brake.**

**STANDARD  
FREIGHT CYLINDER, RESERVOIR AND TRIPLE VALVE.**

(8 in. Diameter by 12 in. Stroke).

**PLATE E33.**

**No. 1. Freight Cylinder, Reservoir and Triple Valve, complete.**

**DETAILS.**

No.		No.	
2.	Cylinder Body.	9.	Release Spring.
3.	Piston Head and Rod, (includes Follower Studs and Nuts).	10.	Reservoir, (includes Studs and Nuts No. 12).
4.	Back Cylinder Head.	11.	Drain Plug.
5.	Follower Stud and Nut.	12.	Reservoir Stud and Nut.
6.	Follower.	13.	Cylinder-head Bolt and Nut.
7.	Piston Packing Leather.	14.	Cylinder Gasket.
8.	Packing Expander.	15.	Triple-valve Gasket.

For Triple Valve, see Plate E32.

Orders must give number of Plate and of piece wanted.

# DETAILS OF FREIGHT CAR BRAKE APPARATUS.

PLATE E34.

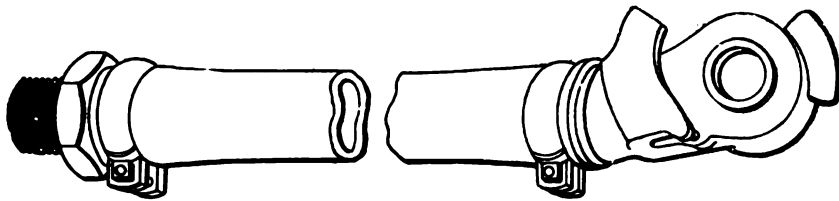


Fig. 1.

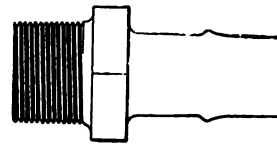


Fig. 4.

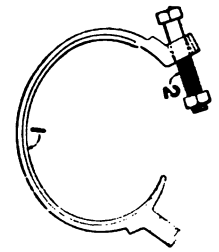


Fig. 5.

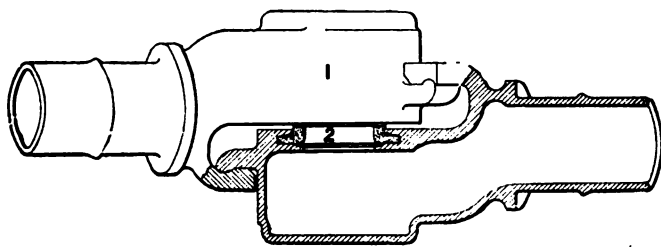


Fig. 2.

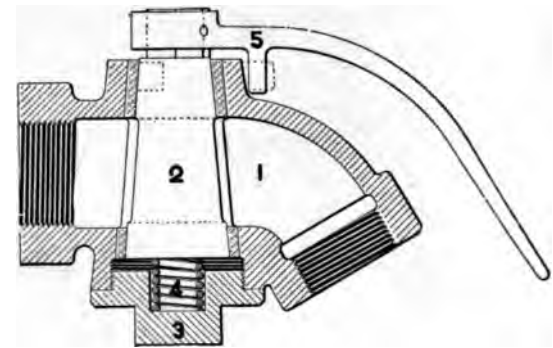


Fig. 6.

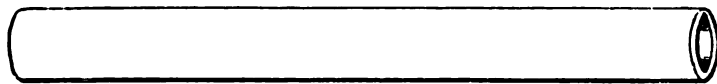


Fig. 3.

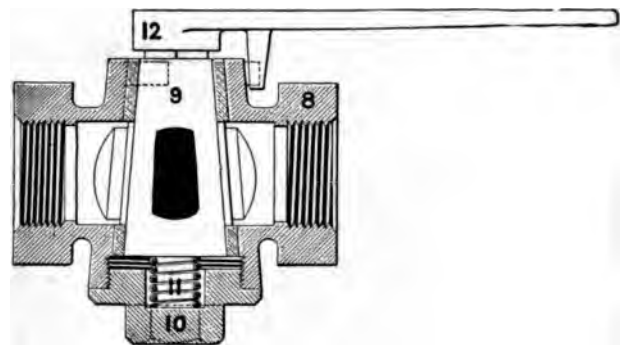


Fig. 7.

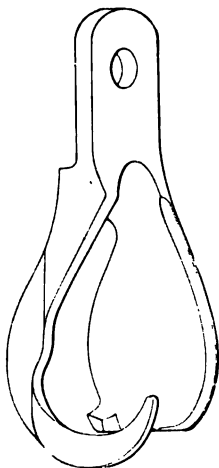


Fig. 8.

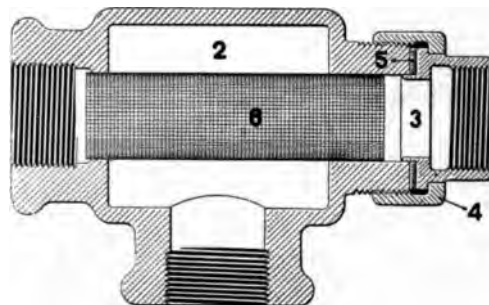


Fig. 9.

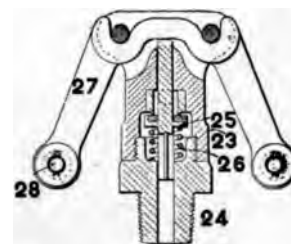


Fig. 10.

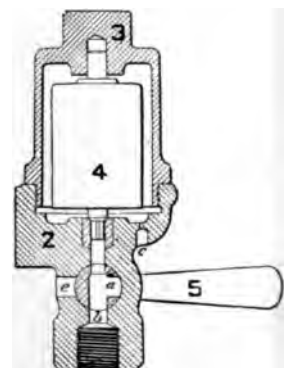


Fig. 11.

## The Westinghouse Automatic Brake.

### DETAILS OF STANDARD FREIGHT CAR BRAKE APPARATUS. PLATE E34.

<p style="text-align: center;">FIG. 1.</p> <p>One and One-quarter inch Hose and Coupling, complete, (order in pairs).</p> <p style="text-align: center;">FIG. 2.</p> <p>No. 1. Coupling, Standard for One and One-quarter inch Hose, (order in pairs). 2. Coupling Packing Ring.</p> <p style="text-align: center;">FIG. 3.</p> <p>Standard One and One-quarter inch Hose.</p> <p style="text-align: center;">FIG. 4.</p> <p>One and One-quarter inch Hose Nipple.</p> <p style="text-align: center;">FIG. 5.</p> <p>No. 1. One and One-quarter inch Hose Clamp. 2. Hose-clamp Bolt.</p> <p style="text-align: center;">FIG. 6.</p> <p>One and One-quarter inch Angle Cock, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 1. Angle-cock Body. 2. Angle-cock Key. 3. Angle-cock Cap. 4. Angle-cock Spring. 5. Angle-cock Handle.</p> <p style="text-align: center;">FIG. 7.</p> <p>One and One-quarter inch Cut-out Cock, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 8. Cock Body. 9. Cock Key. 10. Cock Cap. 11. Key Spring. 12. Cock Handle.</p>	<p style="text-align: center;">FIG. 8.</p> <p>One and One-quarter inch Coupling Hook.</p> <p style="text-align: center;">FIG. 9.</p> <p>No. 1. One and One-quarter inch Drain Cup, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>2. Cup Body. 3. Union Swivel. 4. Union Nut. 5. Gasket. 6. Strainer.</p> <p style="text-align: center;">FIG. 10.</p> <p>Release Valve, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 23. Release-valve Cylinder. 24. Release-valve Cap. 25. Release Valve. 26. Release-valve Spring. 27. Release-valve Handle. 28. Release-valve Pin.</p> <p style="text-align: center;">FIG. 11.</p> <p>Improved Pressure Retaining Valve, complete.</p> <p style="text-align: center;">DETAILS.</p> <p>No. 2. Pressure Retaining Valve Body, (includes Key and No. 5). 3. Pressure Retaining Valve Case. 4. Pressure Retaining Valve Weight. 5. Pressure Retaining Valve Handle.</p>
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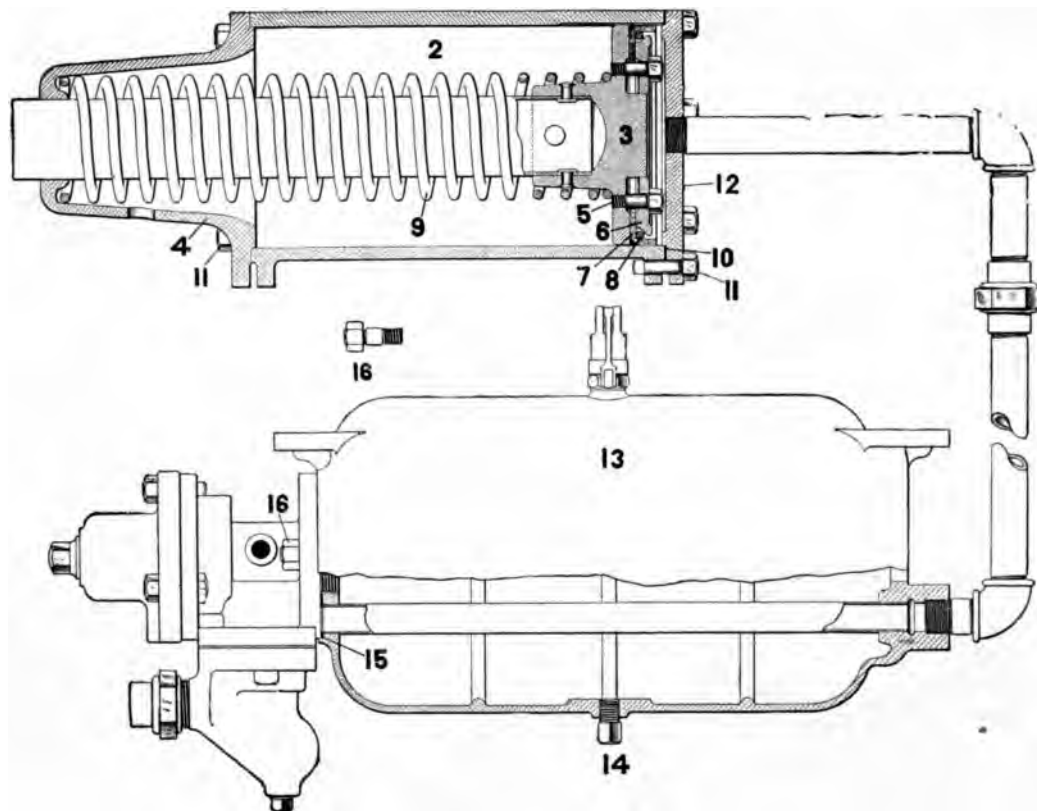
Orders must give number of Plate and of piece wanted.



“STANDARD SPECIAL” FREIGHT CAR BRAKE CYLINDER WITH  
DETACHED AUXILIARY RESERVOIR AND TRIPLE VALVE.

(8 in. Diameter by 12 in. Stroke).

PLATE E35.



## The Westinghouse Automatic Brake.

### "STANDARD SPECIAL" FREIGHT CAR BRAKE CYLINDER WITH DETACHED AUXILIARY RESERVOIR AND TRIPLE VALVE.

(8 in. Diameter by 12 in. Stroke).

PLATE E35.

"Standard Special" Freight Car Brake Cylinder, with Detached Auxiliary Reservoir and Triple Valve, complete.

#### DETAILS.

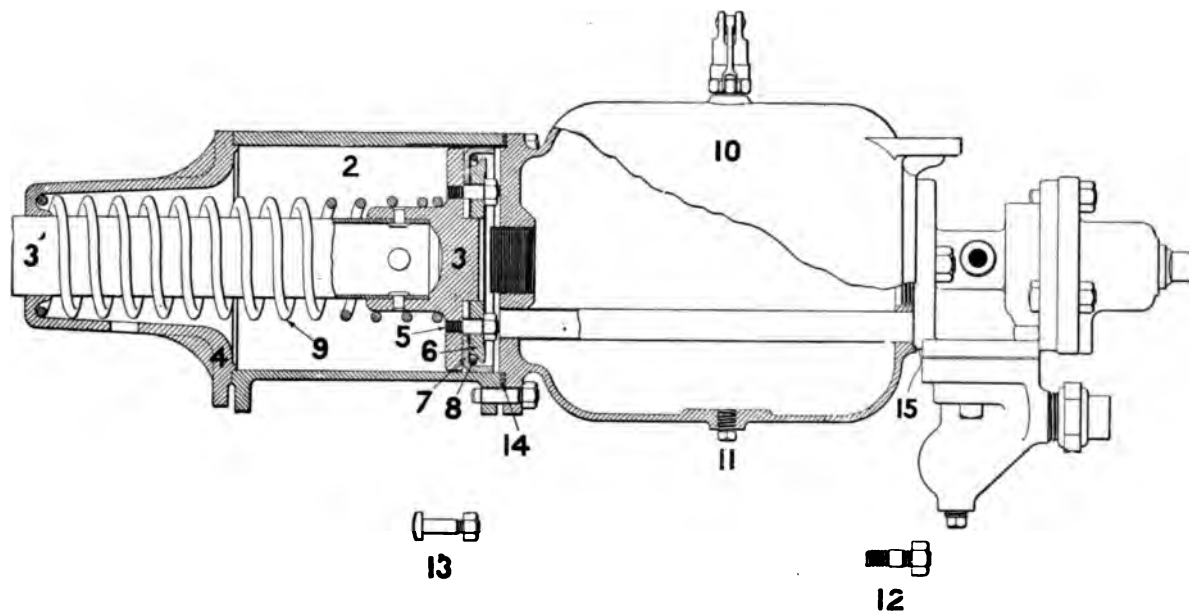
No.		No.	
1.	Brake Cylinder, complete.	9.	Release Spring.
2.	Cylinder Body.	10.	Gasket.
3.	Piston Head and Rod, (includes Follower Studs and Nuts).	11.	Cylinder Head Bolt and Nut.
4.	Back Head.	12.	Front Head.
5.	Follower Stud and Nut.	13.	Special Auxiliary Reservoir, (in- cludes Studs and Nuts No. 16).
6.	Follower.	14.	Drain Plug.
7.	Piston Packing Leather.	15.	Triple-valve Gasket.
8.	Packing Expander.	16.	Reservoir Stud and Nut.

For Triple Valve, see Plate E32.

Orders must give number of Plate and of piece wanted.

**"SPECIAL"**  
**FREIGHT CYLINDER, RESERVOIR AND TRIPLE VALVE.**  
 (8 in. Diameter by 8 in. Stroke).

PLATE E36.



All parts numbered in above Plate constitute the "Special" apparatus. Remainder of fixtures for complete Car Equipment are same as for "Standard" Freight Car Brake apparatus, Plate E32 and Plate E34.

## The Westinghouse Automatic Brake.

“SPECIAL”  
FREIGHT CAR CYLINDER, RESERVOIR AND TRIPLE VALVE.  
(8 in. Diameter by 8 in. Stroke).

PLATE E36.

No. 1. “Special” Freight Cylinder, Reservoir and Triple Valve, complete.

DETAILS.

No.		No.	
2.	Cylinder Body.	9.	Release Spring.
3.	Piston Head and Rod, (includes Follower Studs and Nuts).	10.	Reservoir, (includes Studs and Nuts No. 12).
4.	Back Head.	11.	Drain Plug.
5.	Follower Stud and Nut.	12.	Reservoir Stud and Nut.
6.	Follower.	13.	Cylinder-head Bolt and Nut.
7.	Piston Packing Leather.	14.	Cylinder Gasket.
8.	Packing Expander.	15.	Triple-valve Gasket.

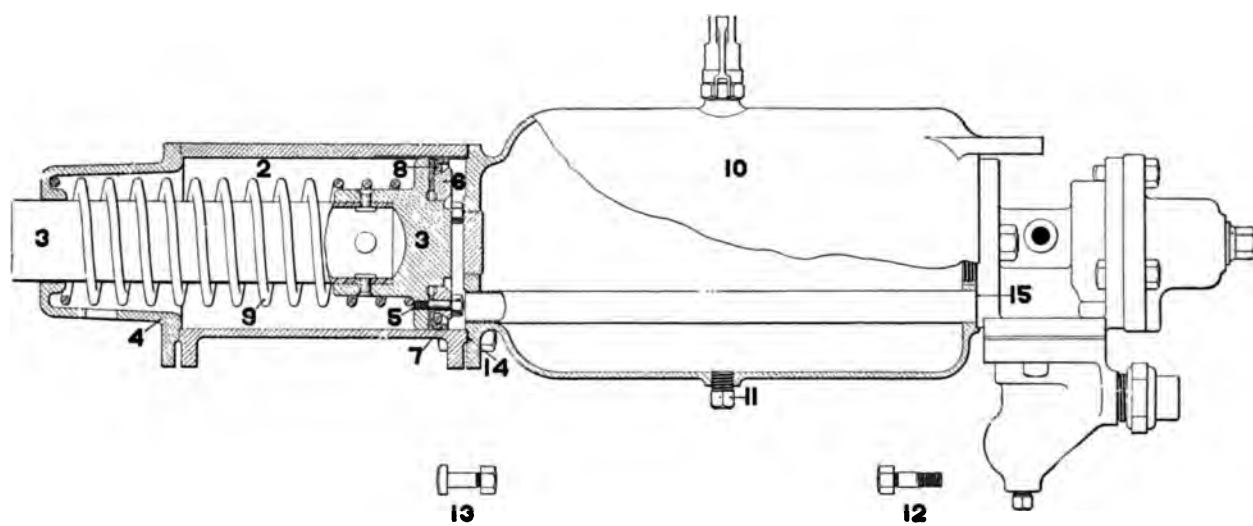
For Triple Valve, see Plate E32.

Orders must give number of Plate and of piece wanted.

NARROW GAUGE FREIGHT CAR BRAKE CYLINDER, RESERVOIR  
AND TRIPLE VALVE.

(6 in. Diameter by 8 in. Stroke.)

PLATE E37.



NARROW GAUGE FREIGHT CAR BRAKE CYLINDER,  
RESERVOIR AND TRIPLE VALVE.

(6 in. Diameter by 8 in. Stroke).

PLATE E37.

No. 1. Narrow Gauge Freight Car Brake Cylinder, Reservoir and Triple Valve, complete.

DETAILS.

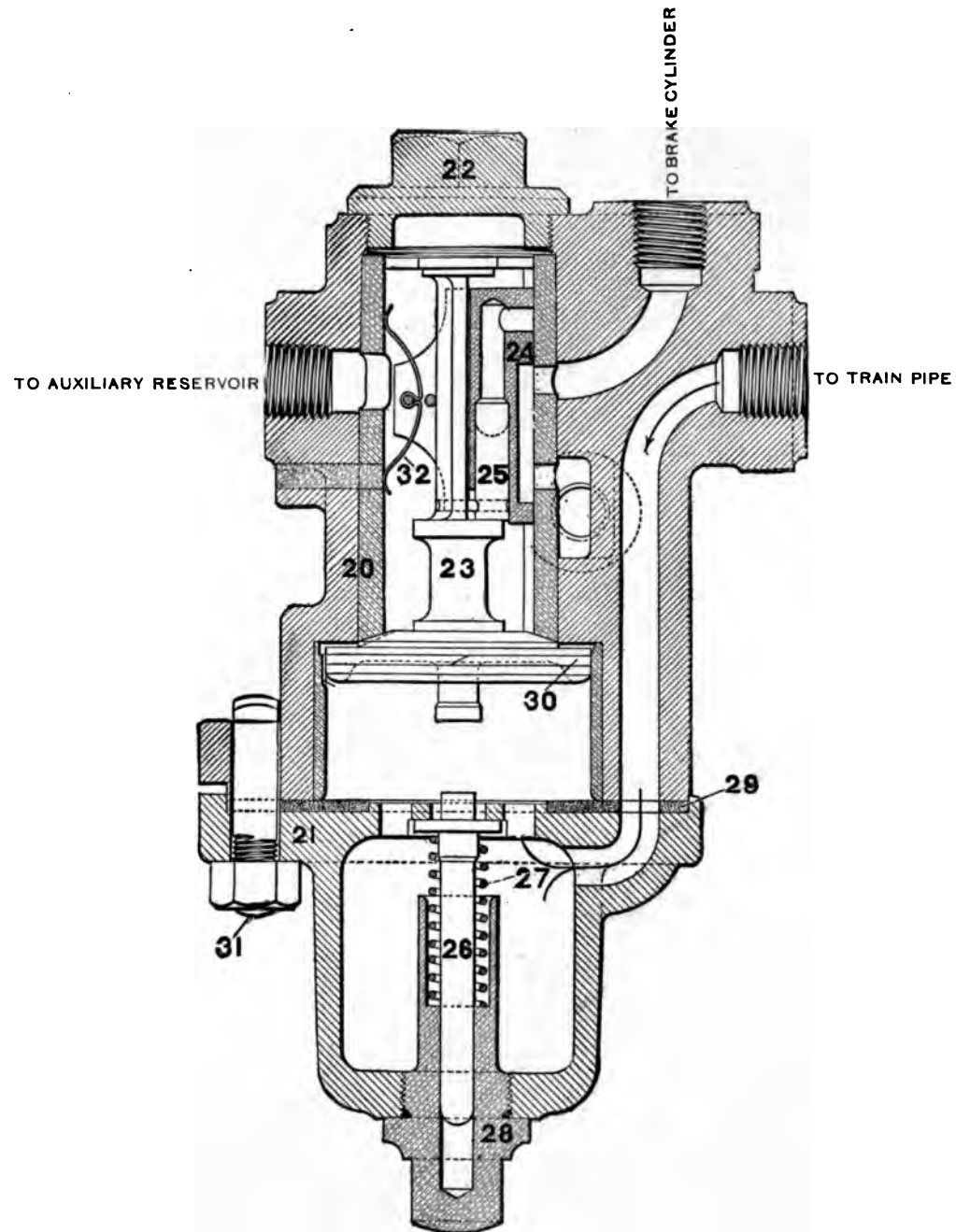
No.		No.	
2.	Cylinder Body.	9.	Release Spring.
3.	Piston Head and Rod, (includes Follower Studs and Nuts).	10.	Reservoir, (includes Studs and Nuts No. 12).
4.	Back Head.	11.	Drain Plug.
5.	Follower Stud and Nut.	12.	Reservoir Stud and Nut.
6.	Follower.	13.	Cylinder-head Bolt and Nut.
7.	Piston Packing Leather.	14.	Cylinder Gasket.
8.	Packing Expander.	15.	Triple-valve Gasket.

For Triple Valve, see Plate E32.

Orders must give number of Plate and of piece wanted.

SPECIAL DRIVER BRAKE TRIPLE VALVE.

PLATE E38.



SPECIAL DRIVER BRAKE TRIPLE VALVE.

PLATE E38.

No. 1. Special Driver Brake Triple Valve, complete.

No.		No.	
20.	Triple Valve Case.	27.	Graduating Spring.
21.	Drain Cup.	28.	Graduating Nut.
22.	Cap Nut.	29.	Gasket.
23.	Piston, (Includes No. 30).	30.	Packing Ring.
24.	Slide Valve.	31.	Bolt and Nut.
25.	Graduating Valve.	32.	Slide Valve Spring.
26.	Graduating Stem.		

Orders must give number of Plate and of piece wanted.





## The Westinghouse Automatic Brake.

### CONDITIONS UNDER WHICH AIR BRAKE AND TRAIN AIR SIGNALING APPARATUS IS SOLD.

The Air Brake and Train Signaling Apparatus supplied by this company will be sold subject to the following conditions :

First. License to use our complete sets of Air Brake and Train Signaling Apparatus, as well as the separately patented portions thereof, is not granted until the same are fully paid for.

Second. In order to secure and preserve complete uniformity to its standards, this company reserves to itself the exclusive right to make and furnish for renewals and repairs at a reasonable manufacturer's price, all Engineer's and Equalizing Brake Valves, Pump Governors, Hose Couplings and Triple Valves, and all parts of same as may be required for such use.

Third. The detail parts of Brake Apparatus made by this company are not to be used in connection with Brake Apparatus supplied by other manufacturers, unless upon terms and conditions to be specially agreed upon, and expressed in writing.

Fourth. This company will *protect all bona fide* purchasers and users of its apparatus against any claim for alleged patent infringement on apparatus furnished by it, provided it shall first have written notice of such claim and be allowed an opportunity to defend any suit which may be brought.

Fifth. It is expressly stipulated that the apparatus of Schedules L, M, N and O shall be used only for the purpose of changing the old form of Automatic Brake to the Quick Action form, and for adding thereto the Compressed Air Train Signaling Apparatus. Nor shall the apparatus of Schedule H<sup>1</sup> be used for or in the equipment of passenger, baggage, mail or express cars.

The following are the several schedules of Air Brake and Train Signaling Apparatus, with annexed prices, f. o. b. works, Wilmerding, Pa, and which are sold subject to the foregoing conditions.

### LIST OF SCHEDULES AND PRICES.

<b>SCHEDULE A1. LOCOMOTIVE EQUIPMENT, WITH DRIVER BRAKE CYLINDERS. \$250.00.</b>	<b>SCHEDULE A1, (constituting the Equipment of a Locomotive in the Automatic System of Brake Apparatus, and including Driver Brake Cylinders) :</b> One 8 in. Air Pump, One Main Reservoir, Two Driving Wheel Brake Cylinders of suitable size as required, One 10 in. by 24 in., 12 in. by 33 in. or 16 in. by 33 in. Auxiliary Reservoir as required, One 3 in. Triple Valve, One Triple Valve Bracket and Nipple, One Drain Cup, One Engineer's Equalizing Brake Valve, One 10 in. by 12 in. Equalizing Reservoir, One Pump Regulator, One Duplex Air Gauge, One $\frac{3}{4}$ in. Steam Valve, One pair 1 in. Couplings with Hose and Angle Fittings complete, One Coupling Hook, Two 1 in. Stop Cocks, One 1 in Reservoir Union, One $\frac{3}{4}$ in. Reservoir Union, One Reservoir Drain Cock. Price, \$250.00. Price, with 9 $\frac{1}{2}$ in. Pump, \$275.00. (Pipe and Pipe Fittings not included).
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## The Westinghouse Automatic Brake.

**SCHEDULE B1.  
TENDER  
EQUIPMENT.  
\$40.00.**

**\*SCHEDULE B1**, (constituting the Equipment of a Tender in the same system): One 8 in. or 10 in. Brake Cylinder as required, One 10 in. by 24 in. or 12 in. by 33 in. Auxiliary Reservoir as required, One 3 in. Triple Valve, One Triple Valve Bracket and Nipple, One 1 in. Tender Drain Cup, One  $\frac{1}{4}$  in. Reservoir Drain Cock, One  $1\frac{1}{4}$  in. Angle Cock with 1 in. Reducer, One pair 1 in. Couplings, with Hose complete, One Angle Fitting, One Coupling Hook. Price, \$40.00. (Pipe and Pipe Fittings not included).

**SCHEDULE C1.  
PASSENGER CAR  
EQUIPMENT.  
\$100.00.**

**SCHEDULE C1**, (constituting the Equipment of a Passenger Car in the same system): One 10 in. Brake Cylinder, One 12 in. by 33 in. Reservoir, One pair 1 in. Couplings with Hose complete, Two Coupling Hooks, One  $3\frac{1}{2}$  in. Quick Action Triple Valve, One 1 in. Drain Cup, Two  $1\frac{1}{4}$  in. Angle Cocks with 1 in. Reducer, One 1 in. Cut-out Cock, One Conductor's Valve, One Reservoir Drain Cock. Price, \$100.00. (Pipe and Pipe Fittings not included).

**SCHEDULE D1.  
PRICE.  
\$35.00.**

**SCHEDULE D1**, (constituting the necessary Equipment in the same system for the operation of Driver Brakes on engines which have already been equipped with Brake Apparatus for train braking service only): Two Driver Brake Cylinders of suitable size as required, One Auxiliary Reservoir of suitable size as required, One Reservoir Drain Cock, One 3 in. Triple Valve, One Triple Valve Bracket and Nipple, One Drain Cup. Price, \$35.00. (Pipe and Pipe Fittings not included).

**SCHEDULE D2.  
PRICE.  
\$25.00.**

**SCHEDULE D2**, (constituting the necessary Equipment in the same system for the operation of Engine Truck Brakes on engines which have already been equipped with Brake Apparatus for train braking service): One Engine Truck Brake Cylinder, One 10 in. x 24 in. Auxiliary Reservoir, One 3 in. Triple Valve, One Triple Valve Bracket and Nipple, One Drain Cup, piece 1 in. x 22 in. Hose, with suitable connections. Price, \$25.00. (Pipe and Pipe Fittings not included).

**SCHEDULE H1.  
FREIGHT CAR  
EQUIPMENT.  
\$40.00.**

**SCHEDULE H1**, (constituting the Equipment of a Freight Car in the Automatic Freight Brake System): One Brake Cylinder, not exceeding 8 in. in diameter, with 12 in. stroke, One Auxiliary Reservoir, not exceeding 11 in. by  $21\frac{1}{2}$  in., One  $3\frac{1}{2}$  in. Quick Action Triple Valve, One Pressure Retaining Valve, One Car Drain Cup, One pair  $1\frac{1}{4}$  in. Couplings with Hose complete, Two Coupling Hooks, Two  $1\frac{1}{4}$  in. Angle Cocks, One  $1\frac{1}{4}$  in. Cut-out Cock, One Release Valve. Price, \$40.00. (Pipe and Pipe Fittings not included).

**SCHEDULE J.  
SIGNAL EQUIPMENT  
LOCOMOTIVE AND  
TENDER.  
\$30.00.**

**SCHEDULE J**, (being the material necessary to equip a Locomotive and Tender with the Compressed Air Train Signaling Apparatus): One Improved Signal Valve, One Improved Reducing Valve, One Signal Whistle, Two pairs  $\frac{3}{4}$  in. Signal Couplings with Hose and Angle Fittings complete, Two  $\frac{3}{4}$  in. Stop Cocks, Two Coupling Hooks. Price, \$30.00. (Pipe and Pipe Fittings not included).

**SCHEDULE K.  
SIGNAL EQUIPMENT  
CAR.  
\$15.00.**

**SCHEDULE K**, (being the material necessary to equip a Passenger Car with the Compressed Air Train Signaling Apparatus): One Car Discharge Valve, One pair  $\frac{3}{4}$  in. Couplings with Hose and Angle Fittings complete, Two  $\frac{3}{4}$  inch Stop Cocks, Two Coupling Hooks, One Signal Pipe Strainer, One  $\frac{1}{4}$  in. Stop Cock. Price, \$15.00. (Pipe and Pipe Fittings not included).

**\* NOTE.**—Ordinarily an 8 in. Tender Cylinder and 10 in. by 24 in. Auxiliary Reservoir will be furnished on orders for Schedule B1; but if the Tender exceeds 36,000 pounds light weight, orders for this schedule should so state, when 10 in. Tender Cylinder and 12 in. by 33 in. Auxiliary Reservoir will be furnished instead, and without additional charge.

## The Westinghouse Automatic Brake.

\*SCHEDULE L.  
CHANGE  
LOCOMOTIVE  
AND TENDER TO  
NEW AUTOMATIC.  
\$50.00.

\*SCHEDULE L, (being the material necessary to change a Locomotive and Tender from the old form of Automatic Brake to operate the Quick Action form): One Engineer's Equalizing Brake Valve, One 10 in. by 12 in. Reservoir, One Duplex Air Gauge, One 1 in. Cut-out Cock, One 1 in. by 1½ in. Hose Nipple, One 1½ in. Angle Cock with 1 in. Reducer, One 1 in. Reservoir Union, One 1 in. Tender Hose Connection, necessary pipe and pipe fittings. (The last three items are not required if engines are already fitted with 1 in. pipe). Price, \$50.00.

\*SCHEDULE M.  
CHANGE CAR  
OLD TO  
NEW AUTOMATIC.  
\$45.00.

\*SCHEDULE M, (being the material necessary to change a Passenger Car from the old form of Automatic Brake to the Quick Action form): One 10 in. Front Cylinder Head, Two ¾ in. by 4½ in. Tee Head Bolts, One 3½ in. Quick Action Passenger Triple Valve, One 1 in. Car Drain Cup, One 1 in. Cut-out Cock, Two 1½ in. Angle Cocks with Reducers for 1 in. Pipe, Two 1 in. by 1½ in. Hose Nipples, One Piston Cross Head for 1 in. Pin and Lever, necessary pipe and pipe fittings. Price, \$45.00.

\*SCHEDULE N.  
CHANGE  
LOCOMOTIVE AND  
TENDER OLD TO  
NEW AUTOMATIC,  
WITH TRAIN SIGNAL.  
\$80.00.

\*SCHEDULE N, (being the material necessary to change a Locomotive and Tender from the old form of Automatic Brake to the Quick Action form, and also to equip same with Train Air Signaling Apparatus): For Brake: One Engineer's Equalizing Brake Valve, One 10 in. by 12 in. Reservoir, One Duplex Air Gauge, One 1 in. Cut-out Cock, One 1 in. by 1½ in. Hose Nipple, One 1½ in. Angle Cock with 1 in. Reducer, One 1 in. Reservoir Union, One 1 in. Tender Hose Connection, necessary pipe and pipe fittings. (The last three items are not required if engines are already fitted with 1 in. pipe). For Signal: One Improved Signal Valve, One Improved Reducing Valve, One Signal Whistle, Two pairs ¾ in. Signal Hose and Couplings with Angle Fittings complete, One ¾ in. Stop Cock, Two Coupling Hooks, necessary pipe and pipe fittings. Price, \$80.00.

\*SCHEDULE O.  
CHANGE CAR OLD  
TO NEW AUTOMATIC,  
WITH SIGNAL.  
\$60.00.

\*SCHEDULE O, (being the material necessary to change a Passenger Car from the old form of Automatic Brake to the Quick Action form, and also to equip same with Train Air Signaling Apparatus): For Brake: One 10 in. Front Cylinder Head, Two ¾ in. by 4½ in. Tee Head Bolts, One 3½ in. Quick Action Passenger Triple Valve, One 1 in. Car Drain Cup, One 1 in. Cut-out Cock, Two 1½ in. Angle Cocks with Reducers for 1 in. Pipe, Two 1 by 1½ in. Hose Nipples, One Piston Cross Head for 1 in. Pin and Lever, necessary pipe and fittings. For Signal: One Car Discharge Valve, One pair ¾ in. Signal Hose and Couplings with Angle Fittings complete, Two Coupling Hooks, One Signal Pipe Strainer, One ½ in. Stop Cock, necessary pipe and pipe fittings. Price, \$60.00.

\* Upon the delivery at our Works, Wilmerding, Pa., of the old material (excepting such as will be used in changing,) removed from Locomotives and Passenger Equipment Cars, displaced by the apparatus enumerated in Schedules L, M, N and O, a rebate will be allowed as follows:

SCHEDULE.	GROSS PRICE.	REBATE ALLOWED ON DELIVERY TO THE W. A. B. CO. AT WILMERDING, PA., OF DISPLACED MATERIAL.	NET PRICE.
L	\$50.00	\$10.00	\$40.00 per Engine.
M	45.00	30.00	15.00 " Car.
N	80.00	10.00	70.00 " Engine.
O	60.00	30.00	30.00 " Car.

## The Westinghouse Automatic Brake.

**SCHEDULE P.  
SPECIAL  
PASSENGER  
CAR EQUIPMENT.  
\$120.00.**

SCHEDULE P, (constituting a special equipment in the Automatic System for a Passenger Car, the light weight of which is in excess of 55,000 pounds) : One 14 in. Brake Cylinder, One 16 in. by 33 in. Auxiliary Reservoir, One pair 1 in. Couplings with Hose complete, Two Coupling Hooks, One 3½ in. Special Quick Action Triple Valve, One 1 in. Drain Cup, Two 1½ in. Angle Cocks with 1 in. Reducer, One 1 in. Cut-out Cock, One Conductor's Valve, One Reservoir Drain Cock. Price, \$120.00. (Pipe and Pipe Fittings not included).

**SCHEDULE XI.  
CHANGE CAR  
NON-AUTOMATIC  
TO AUTOMATIC.  
\$80.00.**

SCHEDULE XI, (being the Apparatus required to change a Passenger Car from the Non-Automatic to the present Quick Action System) : One 10 in. Front Cylinder Head, Two ½ in. by 4½ in. Bolts and Nuts, One 12 in. by 33 in. Auxiliary Reservoir, One 3½ in. Quick Action Triple Valve, One pair 1 in. Couplings with Hose complete, Two 1 in. Coupling Hooks, One 1 in. Drain Cup, Two 1½ in. Angle Cocks with 1 in. Reducer, One 1 in. Cut-out Cock, One Conductor's Valve, One Reservoir Drain Cock. Price, \$80.00. (Pipe and Pipe Fittings not included).

**EXCHANGING  
PUMPS.**

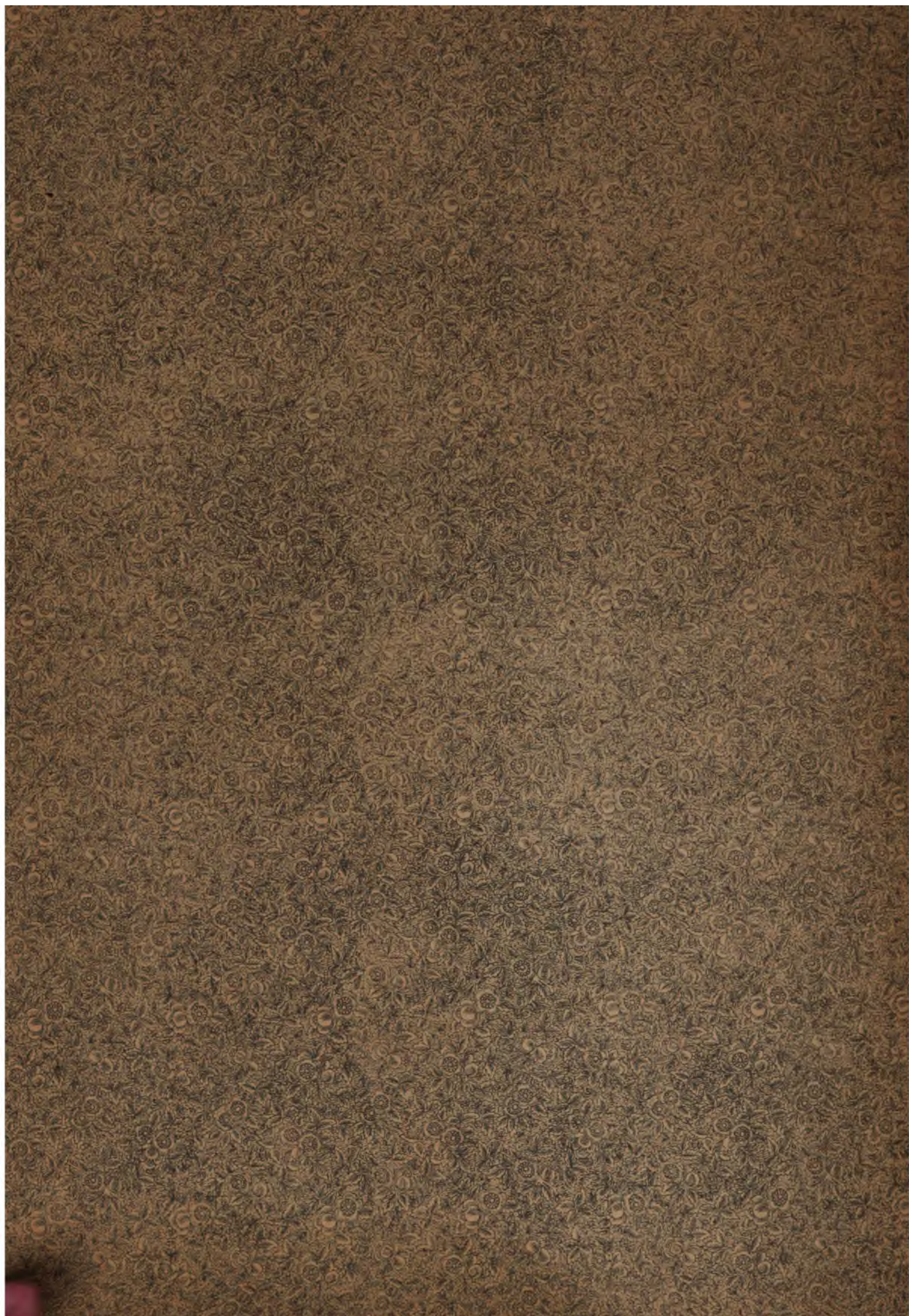
In making exchange of new for old Air Pumps a credit of \$15.00 will be allowed on the price of a new 8 inch, and \$25.00 on the price of a new 9½ inch pump, for each old pump returned to this company, delivered f. o. b. our works, Wilmerding, Pa., new pumps being ordered in corresponding numbers at the time.

THE WESTINGHOUSE AIR BRAKE COMPANY.

PITTSBURGH, PA., January, 1894.









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Catalogue.

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